# ON-SITE SEWAGE MANUAL


DECEMBER 1, 2004

PLACER COUNTY DIVISION OF ENVIRONMENTAL HEALTH

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## Chapter 1. Introduction and Organization Of Manual

This Manual establishes technical and procedural requirements for on-site, subsurface sewage disposal. The Placer County Division of Environmental Health (hereafter, "Division") is the agency responsible for the application of this Chapter.

The California Regional Water Quality Control Boards (the Central Valley Region for the west slope of the Sierra Placer and the Lahontan Region for the east slope of the Sierra Placer) are the state agencies responsible for the protection of ground and surface water quality. While the Division administers this Manual, the Regional Boards retain the authority to issue permits for any discharge of waste that may affect water quality, including discharges from individual systems. The Regional Boards adopt "Basin Plans" to define beneficial uses of water, adopt water quality objectives, and provide guidelines to protect water quality.

This Manual, adopted by Placer County Board of Supervisors Resolution in November 2004, will be updated regularly by the Placer County Wastewater Advisory Committee and this Division, with updating Resolutions presented to the Board of Supervisors at least annually when changes have been made.

Every effort has been made to make this Manual user-friendly by the use of cross-references throughout the document. As changes are made to the Manual, cross references throughout the Manual are also subject to change. Failure of a cross-reference to indicate the appropriate Chapter of requirements due to these changes does not void the applicability of the requirements.

## Chapter 2. Site Evaluation Requirements

A. Review Division Records

In general, all Division parcel files are public information. You are encouraged to review the property file before you make an application for a site evaluation. A site approval report is not required where soils testing was conducted prior to the adoption of this Manual and the Division

B. Obtain a Consultant

Unless waived by the Division, it will be necessary for you to obtain the services of a consultant to help in making the site evaluation. This person will work with you and the Division, and assist you in making important decisions affecting your parcel. The consultant is the person that performs your percolation tests, examines your soil test pit, and prepares the site evaluation report.

C. Make An Application and Pay the Required Fee

1. You must then make an application for a site evaluation to the Division and pay the required fee. The Placer County Board of Supervisors sets the fee.
2. The application form for this service must be filled out completely by the owner or the owner's agent.
3. It is important that sufficient information be provided with the application. This must include:
    a. An accurate location map. We must be able to find your property.
    b. A legible copy of the Assessor's plat.

c. Additional information will be helpful. This could include: a copy of the survey map (if available), location of wells, streams, ponds, drainage ways, proposed house site, existing buildings, rock outcrops, easements, proposed driveways, and so forth.

D. Schedule the Site Evaluation

Your consultant will schedule an appointment with the Division to meet at your property to perform the soil tests. The "soils test pits" are excavations with a backhoe to examine the different soil layers. It is essential that the property boundaries are located and clearly identified.

E. Conduct the Site Evaluation

1. Your consultant, the backhoe and operator, and the Division representative will all meet at the property.
2. A minimum of three (3) soil test pits will be excavated in an area proposed for placing a system. In some cases, more soil test pits will be needed to find a suitable area for the sewage disposal system.
3. Along with the soil test pits, the overall site will be evaluated by the Division and your consultant for other considerations, such as slope, leaking irrigation ditches, setbacks, road cuts, etc. The Division will complete a report for each site evaluated after receiving and reviewing the consultant's site evaluation. The report will contain information that defines all areas tested, and comments on the ability to dispose of sewage.
4. All soil test pits must be protected to prevent people and animals from falling in. There are specific State laws, which also regulate this. For greatest safety, the soil test pits shall be backfilled upon completion of the evaluation. Where sufficient information is already available, the Division may waive the requirement for soil test pits.

F. Have Percolation Tests Performed

Percolation tests are typically required before a site evaluation report can be completed. Percolation tests must be done according to the requirements in this Manual.

G. Obtain a Site Approval Report

The primary purpose of the site evaluation is to determine whether or not a parcel can accommodate a system. Your consultant will be responsible for performing all required testing. The Division's role is one of verification and to serve as a resource. This prudent system of "checks and balances" has proven to provide for the best possible project.

If a suitable site is identified at the site evaluation, this will be confirmed in the Division's site approval report. It also helps preserve property rights by establishing a probable future sewage disposal site for setback considerations when improvements are proposed for neighboring properties, such as wells, ponds, etc. However, if the site evaluation does not identify a suitable area, the site evaluation and approval reports will not support the issuing of a sewage disposal system permit.

1. Regardless of the outcome of the site evaluation, the consultant for the site must provide the Division a site evaluation report, including a scaled (1"=50' mini-

mum) site plan identifying the location and results of all soils testing performed. The soils test results provided must show the minimum information required on forms specified by the Division. For sites where a sewage disposal area is identified, the proposed system area and layout must also be shown.

2. A site approval report must be prepared by the Division before a sewage disposal system permit application can be accepted. (Exception: a site approval report is not required where soils testing was conducted prior to the adoption of this Manual and the Division finds that the site and prior test results are acceptable.) The site approval report is not a permit to install a system.
3. The site approval report will specify the type(s) of system(s), if any, that can be approved for a specific site. It will also note any specific limitations or conditions that may be part of an approval for a system. If an off-site easement is required for a system, this easement must be recorded and a copy of the recorded document, with all exhibits, provided to the Division.
4. A site approval report is transferable and runs with the land.
5. An area approved for a system in a site approval report will be considered the same as an already installed system, for purposes of determining on-site or off-site setbacks. An owner may revoke a site approval report by written request to the Division.
6. Future changes in laws governing sewage disposal systems may require a modification to the site approval report.
7. The site approval report and approval for a sewage disposal area are based upon property conditions at the date of the report. Changes made to the property may render that area unacceptable. Examples of types of changes include: grading, cuts and fills, new buildings, wells, ponds, etc. Owners must take care not to encumber or alter the approved area in a manner that affects the future system.

## Chapter 3. Septic Permit Requirements

A. Permit Required

A sewage disposal system permit is needed in order for any person to install, replace/repair (except as provided for in Article 8.24.080), abandon, or change a system. This applies whether you are an owner, contractor, company or public agency. A septic permit is valid for two (2) years from the date it is issued. It may be renewed under procedures described in Chapter 4.

B. Site Approval Report Required

A site approval report must be on file at the Division before a sewage disposal system permit application for a new installation can be submitted. (Exception: A site approval report is not required where soils testing was conducted prior to the adoption of this Chapter and the Division finds that the site and prior test results are acceptable.) In general, all of the Division's property files are public information, and you are encouraged to review your property's file before you make an application.

C. Obtain a Sewage Disposal System Permit Application

The owner or the owner's authorized representative must fill out the application for the permit. The application must be filled out completely. You can obtain an application for a sewage disposal system permit (hereafter "Permit") at the Division offices.

D. Apply for the Sewage Disposal System Permit and Pay The Required Fee

Make sure your application is complete, and that a site approval report prepared by the Division is in the Division's file. (Exception: a site approval report is not required where soils testing was conducted prior to the adoption of this Chapter and the Division finds that the site and prior test results are acceptable.) You must pay a permit fee when you make your application. The permit fee varies with the type of permit, and the Placer County Board of Supervisors determines that amount. A complete application includes, at a minimum:

1. A good location map with clear instructions on how to find the property (conditions may have changed since the site evaluation).
2. Two (2) copies of a site development plan drawn to scale. Scale must not be greater than one (1) inch equals fifty (50) feet. An example of a site development plan is available from the Division. The plan must be drawn so that it is clear and readable. Include the following information on your plans:
    a. Street address and Assessor's Parcel Number;
    b. Property boundaries, dimensions and a North arrow;
    c. All existing and proposed structures/improvements (e.g. houses, barns, wells, driveways, water lines, etc.);
    d. Any physical features, including rock outcrops, creeks, ponds, drainage courses, cuts, fill areas, springs and similar;
    e. Any easements, including, but not limited to, roads, water lines, NID, PCWA, power;
    f. Accurate location of all soils testing done on the property, with numbering to correspond with the site approval report;
    g. Exact location and layout of the proposed system, including any septic tank, pump tank, distribution system, leach field, and 100% replacement area;
3. If it is an alternative or experimental system, include the following:
    a. The consultant's system design work & calculations; and
    b. Two (2) copies of a site development plan with the consultant's wet stamp (original) and signature; and

E. Permit to be Acted Upon

The Division will either issue, conditionally approve, or deny the permit application within twenty (20) working days after receipt of your completed application.

Every effort is made to ensure that your permit application is reviewed and approved quickly and with a minimum of problems. However, certain situations may result in delays or denial of a permit application, renewal, or transfer. These include:

1. The application is incomplete or contains incorrect information.

2. The proposed system would be in conflict with this Manual or those of another agency.
3. The proposed system is significantly different from what was approved in the site approval report.
4. The proposed system location has been modified or encumbered.
5. A public sewer system is available as follows:
    a. For existing parcels, the sewer connection point is within three hundred (300) feet of any boundary of the property, as measured in a straight line; or
    b. For Parcel Maps the sewer connection point is within six hundred (600) feet of any boundary of the property, as measured in a straight line. For commercial projects and final maps the distance requirement will be evaluated on a case-by-case basis.
    c. The public sewer connection can be legally and physically achieved.

If your permit is denied for any reason, the Division will notify you in writing. You may appeal a permit denial by following the appeal procedures of Article 8.24.120.

## Chapter 4. The Issued Permit

Your permit will be issued with certain conditions. These are tailored to your specific parcel conditions and type of system. It is important that the person working on your system has a copy of the approved permit and plans. The conditions on your permit ensure that your system is installed properly. In order to facilitate this:

A. The system must be installed according to the permit conditions. Specific conditions of operation and maintenance issued for your septic permit will remain in effect for the life of the system, unless otherwise specified in the permit.

B. The person who works on your system must be a licensed contractor or the owner.

C. A copy of your approved permit and plans must be at the job site once the work begins and until the final inspection and approval of the work.

D. Your permit is valid for two (2) years from the date it is issued. It may be renewed or transferred by following these procedures:
    1. Permit Renewal
        a. Your permit may be renewed for a maximum of two (2) additional years, 1 year at a time. If your permit has expired; a new application and fee are required.
        b. In order to renew your permit, you must make a written request to the Division.
        c. A permit considered for renewal may require review to ensure that there have not been significant changes in technology or knowledge that affect the design of the system. In some cases, the consultant may be required to review their design.

d. A renewed permit expires when four (4) years have elapsed from the date the permit was first issued. Any further review requires a new permit application and fee to be paid.

2. Re-evaluation of Expired Permits

An expired permit is no longer valid. In order to obtain a new permit, a new fee and application are required. When the Division performs an evaluation of your expired permit, consideration is given to the following:

a. A recent history of system failures in the area.

b. The proposed type of system has a history of problems, and/or is no longer approved for use.

c. The Division was not present for the original soil testing, or there is new information about soils in the area.

A permit issued in this circumstance is considered a new permit.

3. Permit Transfer

A new owner must make a written request for transfer of the permit upon the change of ownership. Expired permits are non-transferable.

E. If you propose a change to the septic permit (e.g., adding bedrooms, different type of system, new system location, etc.), an additional review fee and new permit conditions may be required.

F. At times it may be necessary to revise a system design. Either the consultant or the Division may require this due to changes in technology or new information about a particular type of system. This may require the Division to revise the existing permit requirements and/or conditions.

## Chapter 5. System Inspections

Be sure to follow the permit conditions and requirements closely. If the approved permit design requires the consultant to inspect the system, make sure you coordinate the construction inspections with both the consultant and the Division. Clear communication with your system installer and consultant is vital.

A. Inspections of the system are required. Unless waived by the Division, an on-site preconstruction meeting is required. The Division may waive any required inspection with sufficient justification.

B. The system must be installed as required by this Manual and any permit conditions. Make sure the installer has a copy of the approved permit and plans. Any changes to the permit or plans must first be approved by the Division and the consultant (if any).

C. A request for an inspection must be made to the Division prior to 7:00 AM on the date the inspection is wanted. The Division has a 24-hour phone inspection line to make this process convenient. Incorrect or incomplete inspection request information may delay your inspection.

D. The system must be ready for the type of inspection you are requesting. All necessary components must be installed and functioning. If extra inspections are needed, an additional inspection fee will be charged.

E. An accurate "as-built" or record drawing of the complete installed system must be provided to the inspector at the time of final inspection. The Division will provide an "as-built" drawing form with your permit that can be used to meet this requirement.

F. Following the inspection, the Division will provide you with a written record of inspection(s) made of the system. The record will indicate if any further work or action is required. The system may only be backfilled (covered) with written approval from the Division. For work that is not approved, a correction notice will be provided that specifies the changes to be made.

G. When a consultant's inspection is required, they must provide the Division with a written certification. The certification must indicate that the system has been installed in accordance with the approved design. This is required before a permit can receive final approval.

H. Systems must be backfilled within ten (10) days of written approval for backfill from the Division and the consultant (if required), or as specified by the approved design. In any case, the system must be protected from damage caused by weather, earth-moving, or other causes, and must not pose a public health and safety hazard. Adequate erosion control measures must be in place in accordance with applicable requirements of other county regulations.

I. The Division will issue a Certificate of Satisfactory Completion for the system upon satisfactory completion of the requirements of the permit and this Manual.

## Chapter 6. System Repairs, Modifications, Or Expansions

A. A Permit is Required

A system permit is required for you to change, repair, or increase the sewage flow to your existing system. However, a permit is not required for servicing or replacing installed mechanical or electrical parts of the system. This would include such items as: float switches, pumps, electrical box, sanitary tee in the septic tank, minor structural corrections to the tank, repair/replacement of the distribution box, or repair/replacement of the sewer line from the tank to the distribution box. (Note: a building permit may be needed for some of this work—check with your local building authority). Replacement or addition of a septic tank or leach field does require a sewage disposal system permit.

B. Obtain a Site Evaluation

For certain types of changes or repairs to your system, a site evaluation may be required, as described in Chapter 2. For purposes of this Chapter the Division may waive the requirement of a consultant for the site evaluation. Examples of situations that may require a site evaluation include: a failing system, adding a bedroom to your house, and relocating your system.

C. Make Your Permit Application

The process for applying for this type of permit is similar to the procedure described in Chapter 3. A permit will be issued if the regulation requirements can be met, there is an approved site approval report (if applicable), and the proposed system will not create a public health hazard or degrade or pollute protected waters.

D. Special Considerations for System Repairs

A failing system creates a public health hazard and/or can pollute water.

1. A failing system:
   a. A failing system must be immediately repaired, or its use immediately discontinued. The Division will require temporary measures to eliminate a public health hazard.
   b. If an immediate repair cannot be accomplished, the Division may allow a delay in making the repair. In this case, a Notice of Violation will be issued and the Division will specify temporary measures required to eliminate the immediate public health hazard or pollution of protected waters.
2. Replacing the system
   a. If the site does not meet the requirements for a standard system, the Division may approve a permit for an alternative system so long as those requirements can be met.
   b. If the site does not meet the requirements for a standard or alternative system, the Division may approve a permit for an experimental system or other repair in order to eliminate a health hazard.
   c. Where no type of system can be approved, the system must be abandoned as described in Chapter 17.

E. Obtain a Certificate of Satisfactory Completion

The Division will issue a Certificate of Satisfactory Completion for the system upon satisfactory completion of the requirements of the permit and this Manual.

## Chapter 7. Authorization Notice

A. General Statement

An authorization notice is the administrative approval which allows an increase in sewage flows, a substitution of one structure for another, or a change in use for an existing, previously approved on-site sewage system. Under some circumstances this mechanism would allow the addition of one bedroom to an existing residence without the need to expand the existing system.

B. How to Apply

1. Submit a detailed, scaled plot plan of your property showing at least the following:
   a. The lot boundary locations and dimensions with a north arrow.
   b. The existing structures, septic systems, water wells, and the 100% repair area of the leach field.
2. Complete an application for a Septic Authorization Notice and pay applicable fees.

C. Submit a septic tank pumpers report indicating tank capacity, and that the septic tank has been pumped within the previous 3 years and is structurally and functionally adequate.

If the existing system is determined to be functioning adequately and has been in service for a period of less than 20 years the Division may allow an increase of no greater than

150 gallons. The Division reserves the right to require any soils testing deemed necessary in order to make the finding that the system is functioning adequately and/or that there is available suitable soils for a repair system.

## Chapter 8. Standard System Requirements

A. General Statement

A standard system is a system consisting of a septic tank, distribution unit and gravity-flow disposal field constructed with a minimum of six (6) inches of filter material below a minimum three (3) inch diameter distribution pipe, and maintaining not less than four (4) feet of effective soil depth below the bottom of the trench.

B. Criteria for Approval

In order to be approved for a Standard System, each site must meet the applicable requirements of Placer County Code, Chapter, 8, Article 8.24, and all of the following:

1. Effective soil depth shall extend a minimum of six (6) feet in the disposal area and replacement area and shall extend a minimum of four (4) feet below proposed disposal trench bottoms;
2. Groundwater is not present for at least four feet below the proposed disposal trench bottoms;
3. Soils in the proposed disposal area and replacement area are either sandy loam, sandy clay loam, sandy clay, loam, non-expansive clay, silt loam, or clay loam, or, the design percolation rate is six (6) to sixty (60) minutes per inch;
4. The slope shall not exceed thirty (30) percent within the disposal area and replacement area;
5. A minimum one hundred (100) percent replacement area shall be available;
6. The site has not been filled or the soil has not been modified in a way that would adversely affect functioning of the system;
7. The site shall not be on an unstable landform, where operation of the system may be adversely affected;
8. The site of the disposal area and replacement area shall not be covered by asphalt or concrete, or subject to the activity associated with vehicular traffic, corrals, pens, arenas or other concentrations of livestock, or other activity which would adversely affect the soil or integrity of the system;
9. The site of the disposal area and replacement area shall not be subjected to excessive saturation due to, but not limited to, artificial drainage, driveways, road and roof drains;
10. Setback criteria in Table 1 (contained in Chapter 36) can be met;
11. An artificial drain may be required to intercept and/or drain water from a disposal area; however, it may be required to demonstrate that the site can be de-watered prior to issuing a permit. Where required, artificial drains are an integral part of the system, but do not need to meet setback requirements to property lines, streams, lakes, ponds or other surface water bodies. However, artificial drains shall meet the setback requirements to systems as specified in Table 1 (contained

in Chapter 36). Artificial drains shall be designed by a consultant and meet the other requirements of Chapter 35.

C. Site Evaluation Report Requirements

The consultant must submit a site evaluation report including the following information to the Division in order for the Division to prepare a site evaluation report as detailed in Chapter 2. Soil properties must be described using the classes defined in this Handbook, or using standard USDA–Natural Resources Conservation Service terminology as defined in "Soil Survey Manual, Agricultural Handbook No. 18, 1993". The site evaluation report must include the following information:

1. A scaled site map showing the location and identification of all soil test pits and percolation test holes. The map must include a North arrow, the percent and direction of slope in the area tested, and site features, which affect the location of a system. The scaled site plan must be stamped and signed by the qualified consultant. The boundaries of the proposed sewage disposal area must be shown on this map.
2. The soil description for each soil test pit. Every soil test pit must be described, even if the test shows unsuitable soil or is located in an area that will not be used. Each soil test pit description must include the following information:
    a. Slope–percent and direction.
    b. Effective soil depth.
    c. Depth to groundwater (if observed).
    d. Descriptions of each soil horizon (layer) described, which shall include the following characterization, using the terminology indicated (where provided):
        i. Depth of horizon.
        ii. Soil texture–sand, loamy sand, sandy loam, sandy clay, sandy clay loam, loam, clay, clay loam, silty clay, silty clay loam, silt loam, silt.
        iii. Soil rock fragment content in percent by volume.
        iv. Soil color (moist) using the Munsell Soil Color Chart or other Division approved color chart.
        v. Redoxymorphic features (if present)–otherwise known as mottling.
        vi. Soil structure–granular, platy, or blocky; fine, medium, or coarse; structureless–single grain, or massive.
        vii. Soil pores–few, common, or many; fine, medium, or coarse.
        viii. Soil consistence–loose, very friable, friable, firm, very firm, extremely firm, or solid.
        ix. Soil plasticity–non-plastic, slightly-plastic, plastic, or very-plastic.
        x. Soil stickiness–non-sticky, slightly-sticky, sticky, or very-sticky.
        xi. Soil roots–none, few, common, or many; very fine, fine, medium, or coarse.

xii. Soil horizon boundary–smooth, wavy, irregular, or broken; abrupt, clear, gradual, or distinct.

xiii. Soil moisture–dry, damp, moist, saturated, or seepage.

3. The percolation data sheet(s), correction factor calculation, and average percolation rate. Or, the soil type(s) utilized for determining the sizing if percolation tests were not used for sizing.

4. The proposed type of system (e.g., Standard, Capping Fill, Pressurized Distribution, Pump, Deep Trench, Seepage Pit, Steep Slope, Intermittent Sand Filter, Mound, or Experimental System) and location with respect to specific soil test pit locations.

5. The business name, address and telephone number of the consultant.

6. The date that the testing was conducted.

D. Criteria for System Sizing

1. Single-family dwellings. Systems serving single-family dwellings shall be sized at minimum Three hundred (300) gallons per day (gpd) projected daily sewage flow. Projected daily sewage flow shall be calculated at one hundred and fifty (150) gallons per day per bedroom.

2. Disposal trench sizing for single-family dwellings and commercial facilities. The effective absorption area required, shall be based upon the projected daily sewage flow and one of the following:

a. Rate of sewage application based on soil group in chart below.

| Soil Group | Rate of Sewage Application |
|---|---|
| A* – sand, loamy coarse sand | 1.2 gpd/ft $^2$ |
| B – loamy sand | 0.8 gpd/ft $^2$ |
| C – sandy loam | 0.6 gpd/ft $^2$ |
| D – sandy clay loam, porous silt loam, clay loam, non-expansive clay | 0.45 gpd/ft $^2$ |
| E* – sandy clay, silty clay, silty clay loam | 0.2 gpd/ft $^2$ |

*Soil Groups A and E are not suitable for a standard system.

b. Effective absorption area required, when given the design percolation rate, shall be calculated using the following formulas:

i. For gravity-fed trenches: $3.5/\sqrt{t}$

ii. For pressure-distribution trenches*: $5/\sqrt{t}$

Where "t" is the percolation rate in minutes per inch. Percolation rates of less than six (6) minutes per inch (mpi) and greater than sixty (60) mpi, are unsuitable for a standard system.

*Note: When a pressure-distribution trench is utilized, the sewage disposal system is an alternative system, as described in Chapter 9.

3. When sizing by soil group and more than one soil group is encountered within a soil profile, disposal trench sizing shall be based on the most restrictive soil group encountered within thirty-six (36) inches from the bottom of the disposal trench.
4. When sizing by percolation rate and more than one soil group is encountered within a soil profile, disposal trench sizing shall consider the soil characteristics within thirty-six (36) inches from the bottom of the disposal trench, and may require percolation tests in deeper soil layers.
5. For calculating the required lineal feet of the disposal field, only the trench bottom area shall be considered.

E. Percolation Test Requirements and Procedures

1. General requirements
   a. All percolation tests shall be conducted in accordance with the procedures outlined in this Chapter, or as otherwise approved by the Division.
   b. Percolation testing shall be required when it is determined by the Division that such testing, when coupled with soil test pit evaluations, is necessary to aid in system sizing and design.
   c. Percolation tests are required as part of the site evaluation process for the creation of new lots and parcels.
2. Test hole preparation requirements
   a. Unless otherwise indicated by the Division, there shall be a minimum of three (3) percolation test holes when the disposal area and replacement area are close (close, as determined by the Division); six (6) may be required when the areas are separate (separate, as determined by the Division). More test holes may be required by the Division to completely identify a suitable area.
   b. Unless otherwise approved by the Division, the test hole bottom depth shall be equal to the proposed disposal trench bottom depth. A posthole digger or manual auger shall dig the test section (bottom 8 inches) of the test hole.
   c. Unless otherwise approved by the Division, the diameter of the test hole shall be from six (6) to eight (8) inches.
   d. The test hole sidewall in the test section should be roughened to remove any smearing or compaction caused by the hole excavation process. All loose soil shall be removed and two (2) inches of pea gravel or other material approved by the Division shall be placed in the bottom of the hole. In order to prevent silting of the bottom of the hole and sidewall cave-in, a sidewall gravel pack is to be used in accordance with the chart in this Chapter. Two methods for retaining the sidewall gravel pack are:
      i. One eighth (1/8) inch mesh galvanized hardware cloth rolled into a cylinder at least twelve (12) inches long;
      ii. Perforated plastic pipe in twelve (12) inches (or longer) sections.
3. Presoak requirement

The hole shall be filled with clean water to a minimum depth of twelve (12) inches above the base of the hole. The presoak shall be maintained for a minimum of twelve (12) hours.

4. Test measurement requirements

   a. Percolation tests shall be measured to the nearest $1/16^{th}$ inch from a fixed point.

   b. The percolation test shall begin within four (4) hours following completion of the presoak. Adjust the water level to six (6) inches over the pea gravel bottom and begin the test. This may require adding or removing water to adjust the level.

   c. Readings shall be taken at thirty (30) minute intervals. Refill as necessary to maintain five (5) to six (6) inches of water over the pea gravel bottom at each interval. Readings shall be taken until two consecutive readings do not vary by more than ten percent per reading, with a minimum of three (3) readings. The last thirty (30) minute interval is used to compute the percolation rate. If four (4) inches or more of water seeps from the hole during the thirty (30) minute interval, readings may be taken at ten (10) minute intervals. Readings shall be taken until two (2) consecutive readings do not vary by more than ten percent per reading with a minimum of three (3) readings. The last ten (10) minute interval is used to compute the percolation rate.

5. Test rate determination

The following chart provides a correction factor to determine the corrected percolation rate:

| Hole diameter | Gravel thickness | Correction factor |
|---|---|---|
| 6" | 1" | 1.59 |
| 6" | 1/2" | 1.27 |
| 8" | 1" | 1.14 |
| 7" | 1/2" | 1.04 |

Calculation:

Standard percolation value (minutes per inch) =

Test percolation value (minutes per inch) X (correction factor)

Example: A six (6) inch hole is used with a one (1) inch gravel pack. The test percolation value is 25 mpi.

25 mpi (1.59) = 40 mpi

40 mpi is the standard percolation value for that test hole and will be used in combination with other test hole results when designing the system. The mean percolation rate calculated from all test hole results accepted by the Division shall be the final percolation rate (design percolation rate) assigned for sizing the system.

F. Building Sewer Design, Materials, and Construction Requirements

The building sewer shall be constructed with materials in conformance to building sewer standards identified in the Uniform Plumbing Code. The building sewer pipe shall have a minimum diameter of three (3) inches. Inspections regarding building sewer connection to septic tank shall be performed by the Placer County Building Department.

G. Septic Tank Design, Materials, and Construction Requirements

1. Materials and construction shall be in accordance with Chapter 28.
2. The minimum liquid capacity of any septic tank installed shall be twelve hundred (1200) gallons.
3. Septic tanks to serve single-family dwellings shall be sized on the number of bedrooms in the dwelling, as follows:

| |
|---|
| 1 to 4 bedrooms ---------1200 gallons |
| 5 bedrooms ----------1500 gallons |
| For each additional bedroom over 5, add two hundred (200) gallons |

H. Effluent Sewer Design, Materials and Requirements

The effluent sewer (pipe) shall extend at least five (5) feet beyond the septic tank before connecting to the distribution unit. It shall be installed with a minimum fall of four (4) inches per one hundred (100) feet, but in no instance shall there be less than two (2) inches of fall from one end of the pipe to the other. For installations where more than one (1) disposal trench is utilized with serial distribution, there shall be a minimum of four (4) inches elevation drop from the invert of the septic tank outlet to the invert of the disposal field distribution unit. When connecting a three (3) inch pipe to a four (4) inch pipe, they shall be joined by a fitting that provides a water-tight seal. The effluent sewer pipe materials and construction shall be in conformance with this Chapter.

I. Distribution Box and Diversion Valve Design, Materials, and Construction Requirements

Distribution box and diversion valve design, materials, and construction shall meet the minimum standards set forth in Chapters 29 and 30.

J. Header Pipe Design, Materials, and Construction Requirements

1. Unless otherwise approved, header pipe materials and construction shall at minimum, meet the standards set forth in Chapter 33.
2. The pipe shall be watertight, have a minimum diameter of three (3) inches, and be bedded on undisturbed earth.

K. Disposal Trench Design, Materials, and Construction Requirements

1. Disposal trenches shall be constructed in accordance with the standards contained in the following table, unless otherwise specified.

| | | |
|---|---|---|
| a. | Length maximum: | 00 feet |
| b. | Bottom width minimum: | 24 inches |
| | Bottom width maximum: | 36 inches |
| c. | Depth minimum: | 24 inches |
| | Depth maximum: | 30 inches |

d. Minimum distance of undisturbed soil between disposal trenches (side-wall-to-sidewall) shall be six (6) feet.

2. Disposal trench sizing methods and calculations shall be in accordance with this Chapter.

3. Filter material shall extend the full width and length of the disposal trench to a depth of not less than twelve (12) inches. There shall be at least six (6) inches of filter material under the distribution pipe and at least two (2) inches over the distribution pipe.

4. A soil barrier shall be placed on top of the filter material to exclude fines from the filter material. The barrier shall consist of suitable filter fabric.

5. There shall be a minimum of twelve (12) inches of backfill over the filter material.

6. Gravelless trench construction may be utilized instead of filter material in disposal trench. The design, manufacturing and materials used shall be durable and acceptable to the Division. Sizing for the gravelless disposal trench shall be in accordance with the latest Division policy for gravelless trench sizing. The policy shall be updated and maintained as new information becomes available for this technology, with input provided from the Sewage Advisory Committee.

L. Distribution Pipe Design, Materials, and Construction Requirements

1. Unless otherwise approved, distribution pipe materials and construction shall meet the minimum standards set forth in Chapter 33.

2. The distribution pipes shall have a minimum diameter of three (3) inches.

3. All perforated pipe shall be installed with centerline markings up.

M. Installation Requirements

1. Septic tanks shall be installed on a level, stable base.

2. Septic tanks located in high groundwater areas shall be weighted or provided with an anti-buoyancy device to prevent flotation.

3. All septic tanks shall be installed with watertight risers extending to the ground surface or above. Construction and materials specifications for risers shall be in accordance with Chapter 28.

4. Septic tanks shall be installed in a location that provides access for servicing and pumping.

5. Systems shall not be installed when moist or wet conditions cause trench sidewall or bottom area degradation of soil structure and porosity (which frequently appears as smearing and compaction).

6. The bottom of the disposal trench shall be level to within a tolerance of two (2) inches in 100-feet.

7. Each disposal trench shall have distribution piping that is centered in the trench and laid level to within a tolerance of two (2) inches in 100-feet.

8. Disposal trenches shall be installed on contour.

9. Prior to backfilling the trench, the filter material shall be covered with filter fabric.
10. Backfill shall be carefully placed to prevent damage to the system.
11. Backfill shall be native soil free of large stones, frozen clumps of earth, masonry, stumps, waste construction materials, or other materials that could damage the system.
12. All distribution boxes shall be bedded level on undisturbed soil, aggregate with a minimum of 90% compaction, or concrete.
13. Monitoring wells, of a design approved by the Division, shall be installed at the end of each disposal trench.
14. The system shall be installed as specified in the approved permit.
15. Adequate erosion control measures shall be utilized at all times in conformance with applicable county regulations and per the consultant's design.

N. Required Inspections

All portions of the system are subject to inspection and verification prior to covering. The system shall be inspected for conformance with the permit requirements, including all applicable setbacks. The portions normally inspected include:

1. The building sewer entering the septic tank. (performed by Building Department)
2. The septic tank, including access into any manhole covers.
3. The effluent sewer, distribution unit, and absorption facility.

Other portions of the system may be inspected as required by the permit or if deemed necessary by the Division to determine compliance with the Regulations. Additional inspection and Certificate of Satisfactory Completion requirements are specified in Chapter 6.

O. Large System Requirement

Systems with a projected daily sewage flow greater than two thousand five hundred (2,500) gallons shall be designed in accordance with the requirements set forth in Chapter 27.

## Chapter 9. Alternative System Requirements

A. Definition of Alternative System

An alternative system is any on-site sewage system consisting of treatment and/or disposal components other than a standard system for which the Division may determine meets the requirements of this Article for a renewable operating permit. Alternative systems may include but are not limited to: pressure-distribution, deep trench systems, curtain drains, sand filters, mounds, large systems, or seepage pits.

B. Provisions

Unless otherwise indicated in specific alternative system sections or by the Division, all provisions pertaining to the site evaluation criteria; design (including sizing), installation, construction, and maintenance of standard systems, shall apply to alternative systems.

C. Criteria for System Sizing

The sizing criteria for standard systems shall apply to alternative systems except as otherwise specified in this Chapter.

1. A design percolation rate less than 6 mpi or greater than 60 mpi shall utilize pressure distribution as the means of distribution in the disposal field, consistent with the requirements of Chapter 11.
2. Any proposed design utilizing soil types "A" or "E" shall utilize pressure distribution as the means of distribution in the disposal field, consistent with the requirements of Chapter 11.

D. Alternative Systems in Lieu of Standard Systems

Alternative systems shall not be used in lieu of a standard system when a proposed site can meet the requirements for installation of a standard system.

EXCEPTION. Pressurized distribution may be used in any circumstance where this method of effluent distribution is desired. Deep trench systems may be used as provided in Chapter 13.

E. Periodic Inspection of Installed Systems

Where required by rule, regulation, or State guideline, periodic inspection of installed alternative systems shall be required and/or performed by the Division or a certified service provider. An inspection fee may be charged.

The Division or service provider shall prepare a report of each inspection. The report shall list system deficiencies and a correction report shall be provided promptly to the system owner and the Division. Necessary follow-up inspections shall be scheduled.

F. Commercial Facilities

Projected daily flows for commercial facilities shall be estimated using Table 2 Design Flows (contained in Chapter 36). The Division may approve, on a case-by-case basis, metered water use data, or other supporting data in lieu of the estimated sewage flows set forth in Table 2.

G. Commercial Facilities That Prepare Foods

Commercial Facilities that prepare foods, (e.g., kitchens, restaurants) shall install a grease trap or interceptor pursuant to the requirements of the most recently Board of Supervisors-adopted edition of the Uniform Plumbing Code and amendments thereto, and the requirements of the Placer County Building Department, including a permit if required by that department or the Division.

H. Consultant Inspections

Unless otherwise indicated in a specific section of this Manual, all alternative systems shall be designed and installed under the inspection and approval of a qualified consultant and the Division. A consultant shall submit written certification that the system has been installed in accordance with the approved construction/design plan and permit conditions. The Division shall not issue a Certificate of Satisfactory Completion for any system installation until certification of the installation is received from a consultant. The consultant shall provide the owner with a maintenance manual that outlines the operation of the system, including the owner's responsibilities for maintaining the system.

I. Systems Approved for the Creation of Lots, or Other Building Sites

Alternative systems approved for the creation of lots, parcels and additional building sites shall demonstrate a minimum usable sewage disposal area (MUSDA) in accordance with the chart in Article 8.24.070.

J. Inspection Risers

Inspection risers shall be installed at the end of each disposal trench.

K. Septic Tank Sizing for Commercial Facilities

1. For projected daily sewage flows up to fifteen hundred (1500) gallons, the septic tank shall have a liquid capacity equal to at least one and one-half (1-1/2) days sewage flow, or one thousand two hundred (1,200) gallons, whichever is greater.
2. For projected daily sewage flows greater than fifteen hundred (1500) gallons, the septic tank shall have a liquid capacity equal to one thousand two hundred (1,200) gallons plus seventy-five (75) percent of the projected daily sewage flow.
3. Additional volume may be required by the Division for special circumstances.
4. The quantity of daily sewage flow shall be estimated in gallons per day using Table 2 - Quantities of Sewage Flow (contained in Chapter 36). The Division may approve, for other than single-family dwellings, data from reliable (as determined by the Division) metered water use data in lieu of the estimated sewage flows set forth in Table 2.

L. Permit Application and Construction/Design Plan Requirements

An application for a permit shall be made in accordance with the procedure and requirements of Chapter 3 and include a construction schedule, (including critical points during construction at which time inspections shall be made by the consultant).

## Chapter 10. Capping Fill System Requirements

A. General Statement

A capping fill system is a alternative system where the disposal trench effective sidewall is installed a minimum of twelve (12) inches into natural soil (gravity trench) or a minimum of nine (9) inches into natural soil (pressure trench) below a soil cap of specified depth and texture. The shallow construction of the system allows for installation where fractured bedrock, a limiting layer or groundwater is closer to ground surface. This Chapter describes the requirements for gravity-fed capping fill systems. Pressure-dosed capping fill systems shall meet the requirements of this Chapter as well as Chapter 11.

B. Criteria for Approval

In order to be approved for a capping fill system, each site must meet all of the following conditions:

1. The slope shall not exceed twenty (20) percent in the disposal area and replacement area.
2. Unless otherwise approved by the Division, the effective soil depth shall extend a minimum of four (4) feet below the bottom of the disposal trench. Effective soil depth requirements may vary with pre-treatment systems used in conjunction with a capping fill.

C. Design Criteria

Unless otherwise specified, the system shall be designed in accordance with the provisions of Chapter 8 standard systems.

1. Disposal trenches: Depth: 12 inches minimum and 18 inches maximum
   Width: 24 inches minimum and 36 inches maximum
2. Cap depth: 12 inches (after settling)

D. Installation Requirements

Unless otherwise required by the Division, the installation shall meet the installation and construction requirements of Chapter 8 and the following:

1. The soil to be used for the cap may be examined and shall be approved by the Division and consultant prior to placement.
2. The disposal area shall have the vegetation removed and shall be scarified, parallel to contours, no deeper than six (6) inches.
3. Soil cap shall extend a minimum of five (5) feet beyond the exterior trench sidewall on the uphill side and ten (10) feet elsewhere.
4. The site shall be landscaped for erosion control in accordance with the approved construction/design plan and permit requirements. Additionally, the site shall be protected from the activity of vehicular traffic, corrals, horse arenas, stables, or other activities that could damage the system or the integrity of the soil.

E. Required Inspections

Inspection criteria and issuance of a Certificate of Satisfactory Completion shall be in conformance with Chapter 6.

1. The disposal area and fill material shall be inspected for scarification, soil texture, and moisture content.
2. Prior to backfill of the installed disposal system.
3. The final placement of the soil cap may be inspected.

F. Criteria for System Sizing

System sizing shall meet the minimum requirements of Chapter 8.

## Chapter 11. Pressurized Distribution System Requirements

A. General Statement

Pressurized distribution refers to a method of distributing effluent evenly over the entire soil absorption area through a network of small diameter pipes under low pressure. This method may be an alternative for some sites to mitigate the limitations associated with soils with rapid permeability or slow permeability.

B. Criteria for Approval

Pressurized distribution systems shall meet the following requirements:

1. Pressurized distribution systems may be permitted on any site that meets the requirements for standard systems, or on sites approved for alternative systems. The pressurized distribution system shall meet all the applicable requirements for a system as stated in Chapter 11 unless otherwise specified.

2. The proposed disposal area and replacement area shall demonstrate a minimum of four (4) feet of effective soil depth beneath the disposal trench bottom.
3. For existing lots or parcels, pressure distribution systems may be installed in soil Groups A, B, C, D, or E, as identified in Chapter 8, or percolation rates 1-240 minutes per inch.
4. For creating lots and parcels, pressure distribution systems may be installed in Soil Groups A, B, C, D, and E as identified in Chapter 8, or percolation rates 6-120 minutes per inch. Percolation rates of 1-5 minutes per inch require pre-treatment equivalent to an intermittent sand filter system.
5. System monitoring and inspections requirements in conformance with Chapter 24.

C. Design, Materials and Construction Requirements

1. General
   a. All materials used in pressurized systems shall be structurally sound, durable, and capable of withstanding normal stresses incidental to installation and operation.
   b. Nothing in these rules shall be construed to set aside applicable building, electrical, or other codes. An electrical permit and inspection from the local Administrative Authority shall be obtained if required for pump wiring installation.
2. Criteria for system sizing

   The disposal area and septic tank capacity shall at a minimum meet the provisions of Chapter 8.
3. Pressurized distribution lateral requirements

   Piping, valves and fittings for pressurized systems shall meet the following minimum requirements:
   a. All pressure transport, manifold, distribution lateral piping and fittings shall meet or exceed the requirements for Schedule 40 PVC pressure pipe as identified in ASTM Specification D1785 or other material approved by the Division.
   b. All pressure distribution laterals and fittings shall be adequately sized for the design flow.
   c. All pressure transport and manifold piping shall be adequately sized for the design flow.
   d. Pressure transport piping shall be uniformly supported along the trench bottom, and at the discretion of the Division, it shall be bedded in sand or other material approved by the Division;
   e. The ends of lateral piping shall have blow-off risers that accommodate threaded plugs or caps.
   f. All joints in the pressure distribution manifold, lateral piping, and fittings shall be solvent welded, using the appropriate solvent for the pipe materi-

al. Pressure transport piping may be solvent welded or rubber ring jointed;

g. A gate valve or ball valve shall be placed on the pressure transport pipe, in or near the dosing tank, when required.

h. A check valve shall be placed between the pump and the gate valve, when required. A check valve is not required if the pump has an internal check valve. All check valves and gate valves must be in an accessible and protected location for maintenance and repair.

i. An anti-siphon valve shall be placed between the pump and leach field when the leach field is down slope of the pump.

4. Pump

The pump shall meet the minimum design, materials, and construction standards as outlined in Chapter 32.

5. Dosing tank design, materials and construction requirements

a. Materials and construction for dosing tanks shall comply with the minimum standards in Chapter 31.

b. The capacity of the tank shall be sufficient to deliver the design dose and with an additional storage capacity of one day's design flow above the high level alarm. The liquid capacity shall be measured from the invert elevation of the inlet fitting, to the bottom of the tank.

c. Duplex alternating pumps may be required by the Division for some installations.(e.g., large systems approved for commercial facilities) .

d. The dose volume shall be calculated using the following minimum and maximum dosing range formulas:

$V_{min} = V_s + 5V_l$
$V_{max} = V_s + 10V_l$

Where:

$V_{min}$ = Minimum volume of dose
$V_{max}$ = Maximum volume of dose
$V_s$ = Volume of supply line
$V_l$ = Total volume of lateral lines

6. Disposal trench design, materials, and construction requirements

a. Unless otherwise allowed by the Division disposal trenches shall be constructed using the specifications for the standard disposal trench (Chapter 8), except for the following:

i. Pressure lateral piping shall have a minimum six (6) inches of filter material below, and not less than one inch of filter material above the piping; and

ii. Depth: minimum 18 inches
maximum 30 inches

iii. Bottom width: minimum 24 inches

maximum 36 inches

iv. Length: minimum 50 feet
maximum 70 feet

b. The top of the filter material shall be covered with filter fabric or other material approved by the Division.

c. A minimum of 9 inches of backfill is required over the filter fabric within the disposal trench.

d. Inspection and blow-off risers shall be placed at the end of the pressure distribution lateral within the disposal trench.

e. All orifices of pressure distribution laterals that face upward shall be covered with orifice shields to prevent soil washout.

D. Hydraulic Design Criteria

1. There shall be a minimum two (2) feet head at the orifice furthest from the manifold and no more than ten (10) percent head variation within a disposal trench.

2. Lateral piping shall have discharge orifices drilled up with 2 orifices per lateral drilled down for purposes of drainage, a minimum diameter of one-eighth (1/8) inch, and evenly spaced at a distance not greater than two (2) feet in coarse-textured soils or greater than six (6) feet in finer-textured soils.

3. The effect of back drainage of the total volume of effluent within the pressure distribution system shall be evaluated for its impact upon the dosing tank and system operation.

E. Installation Requirements

Installation standards of Chapter 8 shall apply, and:

1. The pressure distribution lateral laid within the center of the trench above the gravel shall be level to within two (2) inches in one hundred (100) feet;

2. Small earth berms may be required at specific intervals on trench bottoms at the discretion of the Division and/or design consultant;

3. Each dosing tank shall be installed on a stable level base;

4. Each dosing tank shall be provided with a watertight riser extending to the ground surface or above, with a minimum inside horizontal measurement equal to or greater than the tank access manhole. The watertight riser shall meet the materials and construction provisions of Chapter 28.

5. Dosing tanks located in high groundwater areas shall be weighted or provided with an anti-buoyancy device to prevent flotation.

F. Sloping Site Requirements

1. Ball or Gate valves or flow restrictors shall be installed on each pressure distribution lateral to facilitate regulation of flow within each lateral.

2. Where the disposal field is located down-slope from the pump, an anti-siphon valve on the supply line to the trenches shall be installed in the dosing tank, above the high liquid level.

G. Required Inspections

Required inspections and issuance of a Certificate of Satisfactory Completion shall be in conformance with Chapter 6, and include the following:

1. A pre-construction meeting between the Division, consultant, and installer
2. Inspection of the dosing system components, e.g., the location of the pump, screen, switches, alarms, and valves; and
3. Inspection of the pressure distribution system and verification of hydraulic head over the pressure distribution laterals (AKA, "squirt test"). Water and electricity must be available for this inspection. If this inspection is performed utilizing a temporary power supply (such as a generator), a final inspection conducted by either the consultant or the Division shall be made after connection to the permanent power supply, to verify the design head over the distribution system.
4. As approved by both the Division and design consultant a "modified squirt test" may be performed in order to allow the trench to be covered and to perform erosion control. This test will check squirt height at the distal end of the laterals with an orifice drilled cap on the lateral riser.

## Chapter 12. Pump System Requirements

A. General Statement

A pump system is utilized to enable the installation of a disposal field upslope of the structure to be served. The effluent is not distributed to the disposal field under pressure, but by gravity flow following pumping to a higher elevation.

B. Criteria for Approval

The criteria for approval as outlined in Chapter 8 shall be met.

C. Criteria for System Sizing

System sizing shall meet the provisions of Chapter 8.

D. Pump Requirements

The pump shall meet the minimum design, materials, and construction specifications in Chapter 32. Additionally, pumps shall meet total head requirements of the site encompassing elevation head, friction head, and pressure head.

E. Pump Tank Requirements

1. The pump tank shall have capacity sufficient to deliver the design dose and have a minimum additional storage capacity above the high level alarm of one day's design flow.
2. The high water alarm shall activate immediately when the remaining pump tank storage volume is equal to the daily design flow capacity.
3. Each tank shall be installed on a stable level base.
4. Construction of the tank shall comply with the standards in Chapter 31.
5. Each pump tank shall be provided with a watertight riser extending to the ground surface or above, with a minimum inside horizontal measurement equal to or greater than the tank access manhole. Provision shall be made for securely fastening the manhole cover.

6. Pump tanks in high groundwater areas shall be weighted or provided with an anti-buoyancy device to prevent flotation.

F. Installation Requirements

Unless otherwise indicated on the permit, installation requirements shall be as specified in Chapter 31 and Chapter 32 (with application as a pump tank, not dosing tank).

G. Required Inspections

Inspection and issuance of the Certificate of Satisfactory Completion shall be in conformance with Chapter 8. Additionally, an inspection of the system components and pump function may be made.

H. Specialized Use of Pump with Pump Basin

1. A specialized purpose for use of a pump and pump basin to address the issue of plumbing elevation for a portion of a residence, or a remote bathroom for outbuildings, being too low in elevation relative to the septic tank to allow gravity flow to the septic tank.
2. The pump for such applications must be capable of pumping two (2) inch solids and pump directly into the building sewer entering the septic tank.
3. A pump basin with pump may be utilized under the following circumstances:
   a. The wastewater does not originate from a kitchen, and
   b. Any toilet being serviced, in the case of residential application, is not the sole toilet utilized by the residence, and
   c. The pump and pump basins are permitted and inspected by the Building Department.

I. Specialized Use of Septic Tank Second Compartment as a Dosing Tank

1. When utilizing a remote bathroom, such as those in a barn or pool house, etc., the second compartment of a septic tank may be utilized as a dosing tank under the following circumstances:
   a. A minimum one thousand five hundred (1,500) gallon septic tank will be used.
   b. In no event, shall the liquid portion be drawn down to within twelve (12) inches of the "T" fitting or baffle slot in the common compartment wall.
   c. The wastewater does not originate from a kitchen, and
   d. Any toilet being serviced, in the case of residential application, is not the sole toilet utilized by the residence, and
   e. The pump and septic tank are permitted and inspected by the Division. as described in Chapter 3.

## Chapter 13. Deep Trench System Requirements

A. General Statement

A deep trench system is a system with disposal trenches greater than thirty (30) inches deep. Trench depth should be kept as shallow as possible to take advantage of those soil horizons that best provide oxygen and promote microbiological activity.

EXCEPTION: The Division may allow the installation of a standard system where the trench depth is deeper than 30 inches in order to mitigate for a shallow limiting layer such as a hard or clay pan, providing the vertical separation requirements for a standard system can be met.

B. Criteria for Approval

A deep trench system will only be permitted under the following conditions:

1. A lot or parcel is inadequate to accommodate a standard or pressure dosed system for the development proposed, and
2. There are greater than 48-inches of effective soil depth below the bottom of the proposed disposal trench in the disposal field and replacement area.

C. Design Criteria

1. Unless otherwise approved by the Division the disposal trench shall have a minimum depth of thirty-one (31) inches, and a maximum width of thirty-six (36) inches.
2. The deep trench system absorption area and septic tank liquid capacity required shall be calculated using the standard system criteria for system sizing in Chapter 8. For calculating lineal feet, the sidewall area (extending the entire gravel depth) shall be used except when using a thirty-six (36) inch wide trench, which shall be sized using the trench bottom.
3. The minimum disposal trench spacing (sidewall-to-sidewall) within a disposal field shall be two (2) times the depth of the filter material.

D. Installation Requirements

Unless otherwise indicated on the permit, or elsewhere in this Chapter, installation requirements shall be the same as for a standard system (Chapter 8).

E. Required Inspections

Inspections and issuance or a Certificate of Satisfactory Completion shall be in conformance with Chapter 6).

## Chapter 14. Steep Slope System Requirements

A. General Statement

A steep slope system is a system installed on sites with slopes greater than thirty (30) percent.

B. Criteria for Approval

A steep slope system shall meet the following requirements:

1. Steep slope systems are not permitted for creating lots and parcels.
2. Steep slope systems for existing parcels may only be developed in conformance with the county General Plan, zoning restrictions, recorded restrictions and notes on the subdivision or parcel map, and any other applicable county requirements.
3. When a deep trench system is incorporated into a steep slope system, the following conditions shall be met:

a. Unless otherwise specified by the Division or hereunder, the provisions for deep trench system (Chapter 13) shall be met.

b. There shall be a minimum effective soil depth of seventy-nine (79) inches in the disposal area and replacement area. For purposes of determining effective soil depth and vertical separation, the depth of limiting layer shall be measured from the upslope side of the disposal trench bottom

c. There shall be a minimum trench width of eighteen (18) inches and a maximum trench width of twenty-four (24) inches.

C. Soil Stability Report

The Division may require a geo-technical report by an engineering geologist or geotechnical engineer where the slope exceeds 30%, or where there are indications of soil instability. The report shall discuss soil stability within the proposed disposal area and replacement area of the system and on the soil's stability with respect to the building foundation, surrounding terrain and adjacent properties. The report shall include, at a minimum:

1. A site plan drawn to scale, showing topography, locations of the proposed house, driveway or other structures;
2. Soil profile information as it relates to soil stability;
3. Discussion of the presence of groundwater, its seasonal variation (if any) and influence on the soil stability after disposal field construction;
4. Statement concerning the stability of the soil and bedrock that may specifically include an evaluation of soil creep and landslide potential at the disposal area and replacement area location and surrounding terrain due to the hydraulic load imposed by the system;
5. Recommendation for interceptor drains (if needed) that may render soil stable and prevent flooding of the disposal area and replacement area;
6. Recommendation of the best structure-driveway-disposal field location relationship as it relates to soil stability; and
7. Recommendation of installation methods and procedures.

D. Installation Requirements

1. Unless otherwise indicated on the permit, or in this Chapter, installation requirements shall be the same as for a standard system (Chapter 8).
2. Trenches shall be installed with a minimum of 12 inches of native soil cover as measured from the downhill side of the trench.

E. Required Inspections

Inspections and issuance of a Certificate of Satisfactory Completion shall be in conformance with Chapter 6.

## Chapter 15. Intermittent Sand Filter System Requirements

A. General Statement

An intermittent sand filter system consists of a septic tank, dosing tank, sand filter bed and a disposal field. Effluent from a structure is periodically dosed to a bed of sand media, bacteriologically and physically treated, and discharged into a disposal field via an underdrain or pump. This system may be an alternative for some sites to mitigate the limitations associated with shallow effective soil depth, soils with rapid permeability and very slowly permeable soils.

B. Criteria for Approval

An intermittent sand filter system shall meet the following requirements:

1. Sand filter systems may be installed in Soil Groups A, B, C, D, and E (as identified in Chapter 8), or percolation rates of 1-240 minutes per inch for existing lots or parcels and 1-120 when creating lots or parcels.
2. The proposed disposal area and replacement area shall demonstrate a minimum of two (2) feet of effective soil depth (eighteen (18) inches if pressurized distribution is used) beneath the disposal trench bottom.
3. Unless otherwise approved, a sand filter system shall only be considered for use for a single family dwelling; and
4. Meet additional requirements prescribed by the January 1996 version of the Placer County Sand Filter Guidelines and Specifications, and subsequent modifications. In the case of a conflict between requirements of the Placer County ordinance/regulations and the Placer County Sand Filter Guidelines and Specifications, the Placer County ordinance/regulations shall take precedence.
5. System monitoring and maintenance requirements in conformance with Chapter 24.

C. Required Inspections

Inspections and issuance of a Certificate of Satisfactory Completion shall be in conformance with Chapter 6.

## Chapter 16. Mound System Requirements

A. General Statement

A mound system is an aboveground or at-grade absorption facility useful in mitigating some of the limitations associated with inadequate effective soil depth. The mound system consists of a distribution network that under pressure evenly delivers effluent from a septic tank to a "mounded" bed of filter material over sand media.

B. Criteria for Approval

The mound design and system shall meet the minimum requirements of the Division and the provisions of the State Water Resources Control Board, Guidelines for Mound Systems, most current version, and amendments thereto. The following provisions shall supersede any conflicting provisions of the Guidelines for Mound Systems that shall be met:

1. An absorption rate of 0.6 gallons per day per square foot ($gpd/ft^2$) shall be used for calculating the mound sand bed area.

2. Sand media as described in the January 1996 version of the Placer County Sand Filter Guidelines and Specifications, and subsequent modifications shall be used for the sand bed.
3. Gravel as identified in the Guideline shall be known as filter material, as defined in Chapter 37 of this Manual.
4. Unless otherwise approved, a mound system shall only be considered for use for a single-family dwelling.
5. System monitoring and maintenance requirements in conformance with Chapter 24.

C. Required Inspections

## Chapter 17. System Abandonment Requirements

A. Inspections and issuance of a Certificate of Satisfactory Completion shall be in conformance with Chapter 6, System Abandonment Requirements.

B. Your system must be abandoned under the following situations:
1. If you have connected t an approved sewer system.
2. The system will no longer be used.
3. If you have received a notice or order from the Division to abandon the system (for reasons such as: the system has failed & cannot be repaired, an unpermitted system, etc.)

C. Your system must be abandoned in the following manner:
1. A permit must be obtained before you abandon a system. The application for abandoning the system will include:
   a. A site plan showing where the septic tank and leachfield are located.
   b. A description of how the system will be abandoned.
2. The septic tank must be pumped by a licensed septic tank pumper (a list of licensed pumper's is available from the Division) to remove the contents. You must provide a receipt
3. The septic tank must be abandoned as follows:
   a. If possible, the septic tank cover will be collapsed, or
   b. If the septic tank cover cannot be collapsed, the tank will be filled so that there is not a cave-in or other structural hazard, or,
   c. The septic tank may be removed to an approved location and,
   d. The septic tank or excavation hole must be filled with clean earth, sand, gravel, or other material approved by the Division.
4. The building wastewater plumbing system, if not connected to an approved septic or sewer system, must be permanently capped.
5. Future construction in the abandoned system area may require special construction considerations.

6. Additional permit requirements may be necessary in order to mitigate unique problems associated with the abandonment of the system.
7. The abandoned tank and subsequent connection to a new tank or public sewer shall be inspected by the authority having jurisdiction, normally either the sewer utility or the Division.

D. Obtain A Certificate Of Satisfactory Completion

The Division will issue a Certificate of Satisfactory Completion for the system abandonment upon satisfactory completion of the requirements of the permit and this Manual.

## Chapter 18. Holding Tank Requirements

A. General Statement

A holding tank is a watertight container designed to receive and store sewage for disposal at another location.

B. Criteria for Approval

A permit shall be issued for a holding tank on sites that meet all of the following conditions:

1. The site cannot be approved for the installation of a standard system or alternative system;
2. No area-wide public sewer system is legally and physically available;
3. The tank is intended to serve a small occasional use industrial, commercial, or recreational facility;
4. Unless otherwise approved by the Division, the projected daily sewage flow is not more than two hundred (200) gallons;
5. The setback requirements outlined in Table 1 (contained in Chapter 36) for a septic tank can be met;
6. The owner of the property shall record a deed restriction agreeing to be served by public sewer system if at any time a connection becomes legally available within three hundred (300) feet of the property; and
7. The owner shall provide the Division with:
    a. A copy of a contract with a County licensed septage hauler that shows the tank shall be pumped at regular intervals or as needed to prevent use of greater than seventy-five (75) percent of the tank's capacity. The contents of the tank shall be disposed of at an approved septage receiving facility, in an approved manner; and
    b. A record of pumping dates and amounts pumped shall be maintained by the property owner and made available to the Division upon request.

C. General Requirements

1. A holding tank does not have to be designed and installed under the inspection and approval of a consultant.
2. No building may be served by more than one (1) holding tank.

3. A single parcel or lot of record may be served by no more than one (1) holding tank.
4. Each tank shall have a minimum liquid capacity of fifteen hundred (1,500) gallons.
5. Holding tanks shall not be used as a method for sewage disposal for creating lots and parcels.

D. Permit Requirement

A Renewable Operating Permit shall be obtained prior to issuance of the Certificate of Satisfactory Completion.

E. Installation, Construction and Monitoring Requirements

All installations shall meet the following:

1. Be located and designed to facilitate visual inspection and removal of contents by pumping;
2. Be equipped with both an audible and visual alarm, placed in a location acceptable to the Division, to indicate when the tank is seventy-five (75) percent full. The audible alarm only may be user cancelable; and
3. Have no overflow vent at an elevation lower than the overflow level of the lowest fixture served.
4. The holding tank construction and installation shall comply with the requirements specified in Chapter 28.

F. Inspections Required

Each holding tank, installed under this Chapter, shall be inspected annually. A fee may be charged by the Division for this service.

## Chapter 19. Vault Privy Requirements

A. General Statement

A vault privy is a structure used for disposal of human waste without the aid of water. It consists of a shelter built above a subsurface vault into which human waste falls. The vault privy has no water connection.

B. Criteria for Approval

Vault privies may be allowed for temporary or limited use areas, where primitive type picnic grounds, campsites, camps and recreation areas are to be maintained, when a septic tank and leach field are not practicable as determined by the Division. The separation distances specified in Table 1 (contained in Chapter 36) shall be met. Vault privies shall not be used for seasonal dwellings, commercial facilities, or single-family dwellings.

As a condition of approval, monitoring to ensure protection of water quality may be required. A construction permit shall be obtained for a vault privy as required by this Chapter.

C. Materials and Construction Requirements

Vault privy (shelters and facilities) shall be constructed in accordance with the minimum requirements contained in Chapter 34.

D. Maintenance Requirement

Vault privies shall be maintained to prevent health hazards and pollution of public waters. The privy vault shall not be allowed to become filled with excreta to a point within two (2) feet of the ground surface. The excreta in the vault shall be pumped out by a licensed septage pumper as necessary to fulfill these requirements. The property owner or septage pumper shall submit the septage pumper's receipt to the Division within thirty (30) days of it's pumping. The privy shall be maintained in a sanitary condition and in good repair.

E. General Requirement

No water-carried sewage shall be placed in vault privies. Contents of vault privies shall not be discharged into storm sewers, on the surface of the ground or into public waters.

## Chapter 20. Portable Toilet Requirements

A. General Statement

A portable toilet is any self-contained chemical toilet facility that is housed within a portable toilet shelter. The portable toilet has no direct water connection.

B. Criteria for Approval

Portable toilets may be approved for temporary or limited use areas, such as construction sites (for use by on-site employees), recreation parks, campsites, and special events, provided that the separation distances in Table 1 (for septic tanks) can be met. Portable toilets shall not be allowed for seasonal dwellings, commercial facilities or single-family dwellings.

C. Materials and Construction Requirements

Portable toilet (shelters and facilities) shall be constructed in accordance with the minimum requirements contained in Chapter 34.

D. Maintenance Requirement

Portable toilets shall be maintained to prevent health hazards and pollution of protected waters.

E. General Requirement

No water-carried sewage shall be placed in portable toilets. Contents of portable toilets shall not be discharged into storm sewers, on the surface of the ground or into protected waters.

## Chapter 21. Seepage Pit Requirements

A. General Statement

Seepage pit systems are systems designed to be used in areas of Placer County, predominately the southwest and west, where subsoils are clay, clay pan, fragipan, hard pan and do not offer opportunities to install typical leach-field type of systems. It is generally acknowledged that the use of these systems addresses only disposal requirements as opposed to treatment and disposal.

B. Test Pit Requirements

At least one test boring to groundwater or ten (10) feet below the proposed design depth of the pits shall be made in the lowest area of the proposed disposal area to evaluate soils. Additional test pits may be required at the discretion of the Division to determine the suitability of the site for on-site sewage disposal.

C. Criteria for Use of Seepage Pit Systems

1. Seepage pits shall be used only to service a single-family residence and only when the site is not approvable for installation of a standard or other alternative system.
2. Seepage pits shall not be used to create lots and parcels that are less than seven (7) acres in size and shall not be approved for use when sewers are physically and legally available to serve the structure.

D. Criteria for Design and Installation

1. The seepage pit system shall meet the minimum setback requirements as specified in Table 1 in Chapter 36.
2. The proposed disposal and replacement areas shall demonstrate beneath the bottom of the pit a ten (10) foot vertical separation distance to groundwater.
3. The depth of the seepage pit shall be at a minimum of fifteen (15) feet and a maximum of thirty-five (35) feet below the ground surface.
4. The Division may require use of a nitrate reducing pretreatment system prior to seepage pit disposal of effluent.
5. Effective soil type shall be limited to sand or loamy sand, with or without gravel.
6. An acceptable test boring shall have a minimum 3-foot column of effective soil and demonstrate a 10-foot vertical separation to groundwater from the design depth of the seepage pits.
7. Seepage pit sizing shall be based upon the area of the effective soil and an application rate of 2.24 gal/day/sqft.

   $(5/\sqrt{t})$, where t = assumed percolation rate of 5 mpi

   $(2.24)\ dh\pi$ = gal/day/pit, where d= diameter of pit, and h= height of effective soil column
8. Seepage pit system sizing shall be based on the following table:

| Feet of Effective Soil Sidewall in 3-Ft Diameter Pit | Number of Required Pits Per Bedroom |
|---|---|
| 3 | 2.4 |
| 4 | 1.8 |
| 5 | 1.4 |
| 6 | 1.2 |
| ≥ 7ft | 1.0 |

Note: The number of pits/bedroom shall be multiplied by the number of bedrooms, then rounded to the nearest whole number

9. Seepage pits shall be a minimum of thirty-six (36) inches in diameter.

10. The seepage pit shall be filled up to the concrete collar with cobbles that are a minimum of three (3) inches in diameter in any dimension or with other filter material approved by the Division. The cobbles or filter material shall be washed clean so as to be free of debris and dirt.
11. A system with multiple pits shall be designed so each pit within the system receives equal quantities of sewage flow via distributions boxes.
12. Seepage pit header pipe inlets, risers, and collars shall be watertight.
13. A minimum distance equal to twelve (12) feet of undisturbed soil shall separate two or more seepage pits from each other.
14. When the Division requires the applicant to obtain the design services of a consultant, the consultant shall certify the system installation prior to the Division issuing a Certificate of Satisfactory Completion.

E. Exception for Repair

In the interest of public health, the Agent may approve a seepage pit septic system based upon a test boring with less than a 3-ft column of effective soil.

F. Land Divisions and Additional Building Sites

1. The On-Site Sewage Ordinance acknowledges, "seepage pits are generally recognized to be systems that provide sewage disposal as opposed to sewage treatment." When creating parcels, it is appropriate to require pretreatment of sewage prior to discharge into seepage pits. Therefore, sand filter pretreatment shall be required for seepage pit septic systems, which will serve new parcels.
2. When using seepage pits, the size of the Minimum Useable Sewage Disposal Area shall be an area adequate for initial and 100% repair for a 5-bedroom residence.

## Chapter 22. Cluster Systems

A. General Statement

Cluster systems, also known as community systems, are typically utilized in Planned Developments, apartment buildings, schools, etc.. The Division will evaluate, on a case-by-case basis, appropriate proposals that incorporate sound engineering principals. The Division may propose specific regulations to address these systems.

## Chapter 23. Seasonal Wet Weather Testing

A. General Statement

Some locations of Placer County are subject to high seasonal ground water or perched groundwater that can have an adverse impact on the performance of on-site systems by eliminating or minimizing the zone of aeration in soils that is critical for optimal sewage treatment. In known or suspected areas of high seasonal ground or perched water the Division will require that soil profiling be performed during the wettest time of the year to evaluate conditions that could adversely impact system performance.

B. Procedure

The Division will make a determination annually concerning the validity of seasonal wet weather testing data based on the amount of rainfall in a given year. Generally this period will generally be allowed between the date fifty (50) percent of the annual rainfall has occurred and the close of the rainy season.

## Chapter 24. Operation, Maintenance And Monitoring

A. Background

1. Placer County has a high priority need at this time for an on-site sewage OM&M program because:
    a. The county is experiencing rapid development and growth
    b. Available land with suitable soil for standard septic systems (septic tank to gravity drain field) is becoming increasingly rare with remaining sites increasingly environmentally sensitive
    c. Demanding site conditions place greater demands on septic systems to provide enhanced treatment prior to discharge into shallow, poorly drained soils
    d. Enhanced treatment and disposal systems need OM&M to assure they continue to function as designed, both to prevent system failure and to protect public health and the environment
    e. Enhaned treatment and disposal systems are a costly investment for the homeowner that needs to be protected through routine OM&M
2. The purpose of this program is to assure on-site sewage systems continue over time to operate as designed, protect the environment, and provide economical, dependable, long-term service to their owners.
3. The program addresses these issues by laying out OM&M requirements that are appropriate for the complexity of the on-site system and the environmental sensitivity of the site. The program stresses homeowner education and participation, and utilizes the private sector for performing required inspections. The program recognizes Placer County Environmental Health's current role for record keeping and quality assurance, but does not preclude a more active role under special circumstances or in response to future needs.
4. The program goals are to assure:
    a. Long-term viability for on site sewage disposal systems
    b. Protection of public health and environmental quality
    c. Protection of the customer's investment in their on-site sewage system and property value
    d. Compliance with State and Regional Water Quality Control Board mandates and agreements
    e. Consistency and compatibility with the County's General Plan, community plans, and County and State ordinances and regulations
    f. Consistency with EPA Guidelines for On-Site Sewage Operation and Maintenance and with the direction taken in development a statewide on-

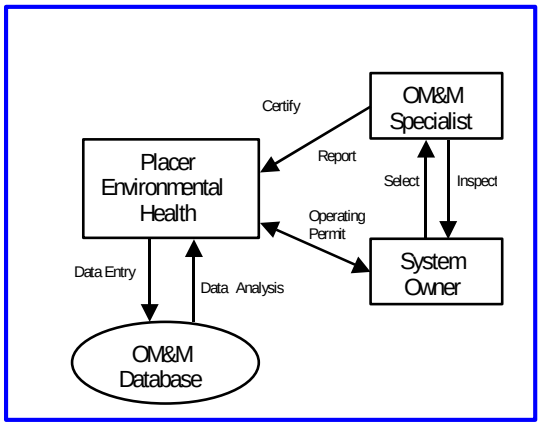
site sewage regulation as directed by California State Assembly Bill ( AB) 885

B. Applicability

1. The program will apply to all new on-site sewage disposal permits issued after the date of adoption of this Manual by the Placer County Board of Supervisors.
2. Owners of existing system will be encouraged to voluntarily opt into the program. Existing on-site systems not voluntarily opting into the program will be brought into the program if the existing system fails.

C. Administration

1. Administrative Overview
   a. Administered county-wide by Placer County Environmental Health
   b. Required OM&M inspections performed by certified OM&M Specialists
   c. OM&M Specialists are individuals or corporations who are certified by Placer County Environmental Health as described in item E.2. of this Chapter.
   d. Placer County Environmental Health staff may perform OM&M inspections for quality assurance surveys, investigations, and where inspection workload exceeds the capacity of certified OM&M Specialists to respond within the timeframes specified in the program.
   e. The following diagram shows the relationship between the parties involved in the program as described:




   f. An alternative allowed under this program is where Placer County Environmental Health would enter into an Memorandum of Understanding with a Third Party Public Entity, such as a public utility district, city, or special district. The Third Party Public Entity would then take on limited administration of the OM&M program within their region. For example, Georgetown Divide PUD manages the oversight of on-site sewage systems within their district in El Dorado County. This type of third party OM&M management is described in greater detail in Appendix One.

2. Roles and Responsibilities
   a. Placer County Environmental Health:
      i. Develop and administer the OM&M program in consultation with the Placer County On-Site Wastewater Advisory Committee
      ii. Establish a record keeping and reporting system to ensure that up-to-date records are kept of location, ownership, site evaluation, de-

sign, and compliance reports are maintained and performance of systems is monitored

iii. Develop and enter into agreements with qualified OM&M Specialists, system owners, and interested Third Party Public Entities where warranted to assure the successful operation of the OM&M program

iv. Assure implementation and operational quality of the program and program staff as described in item E of this Chapter.

v. Monitor and analyze the performance of on-site systems within the County by reviewing OM&M data in relationship to written performance standards

vi. Assure timely follow up, including enforcement actions when necessary as described in item F., for identified problems associated with individual on-site systems and on-site treatment and disposal technologies

b. System Owner

i. Operate on-site system in conformance with its design parameters

ii. Participate in the OM&M program as outlined in this document

iii. Operate and maintain their on-site system consistent with the Placer County Sewage Ordinance

iv. Obtain permits, procure services, and pay fees as may be necessary to correct deficiencies in on-site system identified by Placer County Environmental Health or the OM&M Specialist

c. System Designer

i. Design systems that meet state and local requirements, assuring protection of public health and the environment

ii. Design systems that, to as great an extent possible, are cost effective and reliable, and consistent with "best engineering practices"

iii. Report system malfunctions that result in surfacing sewage or that require major system repair to Placer County Environmental Health within 24 hours

iv. Develop and provide a system owner's user manual and maintenance schedule for each system designed

d. Proprietary System Authorized Agent

i. Instruct or assure that instruction regarding proper operation and maintenance of the system/device is provided to the owner of the residence or facility, the designer, and Placer County Environmental Health

ii. Provide instruction in sufficient detail for maintenance to be achieved through certified OM&M specialists

e. Certified OM&M Specialist

i. Meet and maintain the requirements for certification outlined in this program

ii. Provide all required maintenance and monitoring reports to Placer County Environmental Health within 30 days of service

iii. Reporting of system malfunctions that result in surfacing sewage or that require major system repair to Placer County Environmental Health within 24 hours

f. On-Site Wastewater Advisory Committee

Assist Placer County Environmental in the development, adoption, oversight, evaluation, and improvement of this OM&M program

D. Summary

The following table summarizes OM&M requirements based on site and system variables:

| Site or System Variable | Requirement |
|---|---|
| Septic tank to gravity drain field | Homeowner education *(see subsection E)*<br>OM&M database registry *(see subsection F)* |
| Septic tank to pressure distribution drain field | Homeowner education<br>OM&M database registry<br>Homeowner's manual *(see subsection G)* |
| Enhanced treatment (ie. septic tank to sand filter, aerobic treatment unit, etc.) | Homeowner education<br>OM&M database tracking<br>Homeowner's manual<br>Renewable operating permits *(see subsection H)*<br>Notice on property deed *(see subsection I)*<br>Inspection by Certified OM&M Specialist in first three months of operation and annually thereafter *(see subsection J)* |
| Experimental system | Any combination of the above *(see subsection K)* |
| Alternative system approved through experimental program | Any combination of the above *(see subsection L)* |
| System located within designated area of environmental sensitivity | Any combination of the above *(see subsection M)* |

E. Homeowner Education

1. Environmental Health Services will establish methods for increasing public understanding about the proper use and care of on-site systems. The program goal is to provide system owners with the information they need to properly operate and maintain their systems.

2. At a minimum, the education program should include two components:

a. Distribution of packets of information that include brochures, an operating manual for each type of system, a copy of the final as-built drawing, a rou-

tine maintenance schedule, and forms for record keeping. These packets can be distributed at the time of application processing and will be through a combined collection of specific system information from Environmental Health, the design consultant, and the installer.

b. Provide ongoing community education and outreach programs. Activities should include presentations to homeowner associations, civic groups, and other community organizations, and articles, press releases, and public service announcements distributed to newspapers, radio, and television.

F. OM&M Data Management

1. Database Registry-Only

Placer County Environmental Health will register in the OM&M database standard septic tank to gravity or pressure distribution systems. Registered systems will not be tracked for maintenance or performance using the database.

2. Database Performance-Tracking

Placer County Environmental Health will track in the OM&M database the maintenance and performance of all systems utilizing enhanced treatment. The database will include:

a. Owner of record
b. System type
c. System location
d. Date installation
e. Permitting fee collection mechanism
f. Monitoring frequency schedule for each system
g. Results of maintenance and monitoring reports
h. Identification of OM&M specialist
i. Identification of reset dates for monitoring
j. Collection and prioritization of monitoring results and other mechanisms to verify compliance
k. Summary of corrective and compliance actions
l. GIS linkage

G. Homeowner's Manual

System designers will provide a homeowner's manual to the owners of systems that are more complex in nature than the standard septic tank to gravity distribution system. The manual will include the following elements:

1. Diagrams of the system components
2. Explanation of general system function, operational expectations, owner responsibility, etc.
3. Routine maintenance schedule

4. Names and telephone numbers of the system designer, local health authority, component manufacturer, supplier/installer, and/or the management entity to be contacted in the event of a failure
5. Information on "trouble-shooting" common operational problems that might occur
6. Note: This information should be as detailed and complete as needed to assist the system owner to make accurate decisions about when and how to attempt corrections of operational problems, and when to call for professional assistance.

H. Renewable Operating Permit

1. Conditions for Approval
   a. System installation has received Final Approval by Placer County Environmental Health
   b. The homeowner's manual has been provided by the system designer
   c. The system owner has signed a maintenance agreement with Placer County Environmental Health or a Third-Party Public Management Entity
   d. An As-Built of the system submitted by the system designer has been received and approved by Placer County Environmental Health
2. Operating Permit Renewal Frequency

   Operating permits need to be renewed on an annual basis. However, Placer County Environmental Health may reduce renewal frequency from annual up to triennial based on a case-by-case analysis of the history of the system's reliability and compliance.
3. Renewal Procedures
   a. Placer County Environmental Health or the Third Party Public Management Entity will notify the system owner of the need to renew their system's operating permit. The notice will list the renewal fee and verify that the system has been inspected by the certified OM&M specialist as required.
   b. Compliance with OM&M requirements will be verified by Placer County Environmental Health using the OM&M database.
   c. Placer County Environmental Health or the Third Party Public Management Entity will renew the operating permit upon receipt of the appropriate fee and verification of compliance with OM&M requirements.
4. Change of Ownership
   a. Renewable operating permits are issued to the system owner and are non-transferable when ownership changes.
   b. As part of the review process associated with re-issuance of a Renewable Operating Permit, Placer County Environmental Health or a designated representative may:

i. Review the OM&M database and other records deemed appropriate to assure the system is in compliance with the OM&M program requirements

ii. Make an on-site inspection of the system

iii. Provide information to the new system owner concerning the design, intended use, and performance history of the system

I. Notice on Property Deed

Owners of systems requiring Renewable Operating Permits and OM&M inspections and database tracking will record appropriate notice of these requirements with the property deed for the benefit of future owners and successors.

J. Certified OM&M Specialist Inspections

1. Inspection by a certified OM&M Specialist is required for all systems more complex that the standard septic tank to gravity or pressure distribution drain field system
2. Complexity of inspection will be related to the complexity and maintenance requirements of the system components
3. Initial inspection within three months of system operation is required for all systems utilizing enhanced treatment
4. Inspection frequency required by Placer County Environmental Health will vary in accordance with the maintenance needs of the system components, based on consideration of:
   a. Recommendations of the On-Site Wastewater Advisory Committee
   b. Recommendations of the manufacturer
   c. Industry standards of practice
5. Systems utilizing enhanced treatment, such as sand filter systems, must be inspected at least annually by an OM&M Specialist

K. Experimental Systems

Placer County's Experimental System Program (see Chapter 25) reviews proposals for the use of new sewage treatment and disposal technology. Where there is determined to be adequate technical, scientific, and engineering support for the viability of a proposed technology, a limited number of uses is approved and tracked as experimental systems. The degree of monitoring will be specific to the experimental technology utilized.

L. Alternative system approved through experimental program

1. Placer County Environmental Health has established a process for review and monitoring of new technology, known as the Experimental System Program (see Chapter 25).
2. The process allows technological advances in on-site sewage components and systems to be studied, conditionally permitted, monitored, and moved from an experimental to an alternative status

3. Newly designated alternative components and systems will have OM&M inspection requirements that have been recommended by the On-Site Sewage Advisory Committee and approved by Placer County Environmental Health and the Regional Water Quality Control Board
4. Alternative system performance and maintenance will be tracked using the OM&M database.

M. Systems Within Designated Environmentally Sensitive Areas

1. The OM&M program envisions the potential for designation of an individual system, group of systems, subdivision development, or geographical area as an Environmentally Sensitive Area for purposes of OM&M
2. Proposals for an Environmentally Sensitive Area may be made by individuals, groups, or agencies within Placer County.
3. OM&M requirements appropriate for the designated area would be developed by Placer County Environmental Health and shared at public workshops with individuals and groups affected by the requirements including, but not limited to, property owners, developers, Realtors, surveyors, engineers, recreational groups, environmental groups
4. Designation of an Environmentally Sensitive Area and approval of OM&M requirements would be made by the Placer County Board of Supervisors

N. Placer County Environmental Health Quality Assurance

1. Registration

   All program staff are required to be Registered Environmental Health Specialists in the State of California. This registration assures that each staff has a four-year degree with a scientific emphasis and has passed a rigorous written examination.

2. Annual Performance Review

   Annual performance reviews are conducted for on all Placer County Environmental Health program staff using the forms and procedures adopted by Placer County to assure competency.

O. Certification Requirements for OM&M Specialists

1. Specialized Training and Examination
   a. OM&M Specialists will need to pass an examination developed by Placer County Environmental Health and Placer County On-Site Sewage Advisory Committee to assure a basic minimal competence in on-site sewage and OM&M
   b. Placer County will provide specialized training or assure its availability to prepare applicants for the examination
2. Experience

   OM&M Specialists need a minimum of 2 years' experience performing on-site sewage OM&M, system design, system installation, or septic tank pumping to assure familiarity with on-site systems and technology.

3. Continuing Education

   OM&M Specialists are expected to stay current on issues related to on-site sewage treatment and system operation and maintenance through continuing education equivalent to a minimum of 6 training hours annually.

4. Reciprocity

   Placer County acknowledges and will apply the principle of reciprocity based on equivalency of requirements in other jurisdictions.

5. Renewal of Certification

   a. Certified OM&M Specialists will need to renew their certification every three years.

   b. Certified OM&M Specialists who have been performing OM&M services during the previous certification period will not be required to re-take the examination.

P. Enforcement in Relationship to Certified OM&M Specialist

1. The following will be grounds for action by Placer County Environmental Health against the certification of the OM&M Specialist

   a. Failure to inform Placer County Environmental Health of a failing septic system

   b. Failure to submit OM&M reports within the time period specified within the program

   c. Falsifying findings or data

   d. Misrepresenting OM&M requirements to the homeowner

2. Action taken by Placer County Environmental Health may include:

   a. Requirement for re-examination

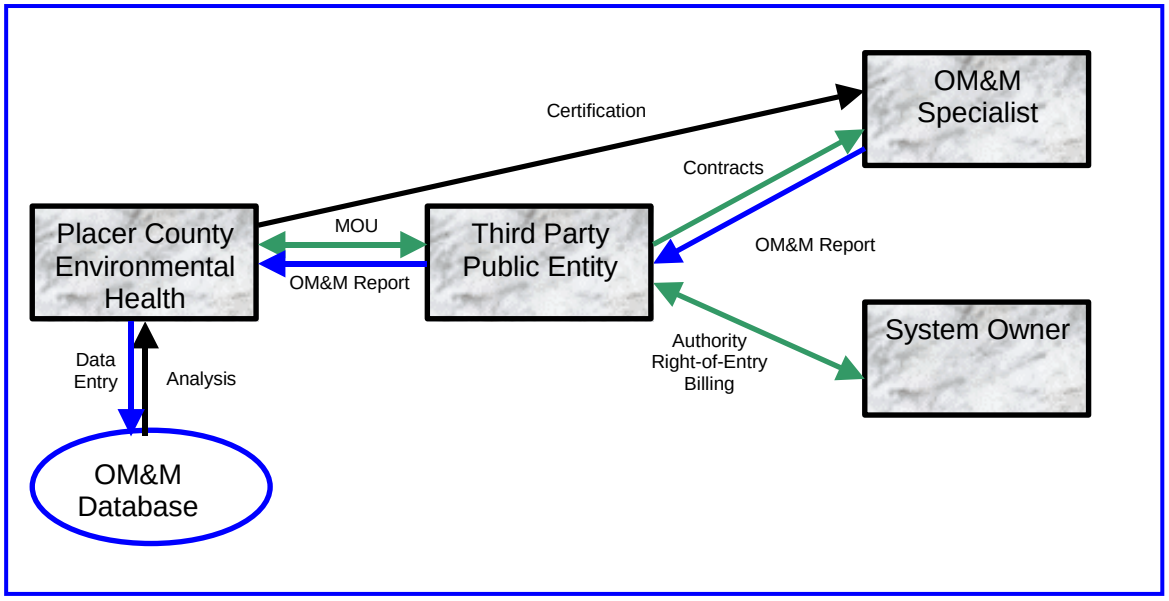
   b. Suspension of certification

   c. Revocation of certification

Q. OM&M Management Through Third-Party Public Entity

An alternative recognized by this program is where Placer County Environmental Health may enter into an MOU to delegate oversight of the OM&M program to a Third Party Public Entity, such as a public utility district, city, or special district, that would take on limited administration of the OM&M program in their region as mutually agreed in the MOU

This variation is shown in the following diagram:




Placer County Environmental Health may enter into an MOU with a Third Party Public Management Entity that would take on the role of assuring OM&M inspections are performed in a manner that meets or exceeds the requirements outlined in this plan.

Placer County Environmental Health, at a minimum, would continue to issue the initial Renewable Operating Permit, manage the county-wide OM&M database, follow up on failing septic system, and provide quality assurance county-wide.

## Chapter 25. Experimental System Requirements

A. Purpose

The purpose of this program is to allow new on-site sewage conveyance, treatment, and disposal technology to be introduced into Placer County in a methodical and monitored manner after review by a multi-disciplinary advisory committee.

B. Homeowner Responsibility

1. It is the responsibility of homeowners to properly operate their system and assure that it is maintained in accordance with the provisions stipulated at the time of permit issuance. Homeowners, after being informed of their responsibilities in the license agreement, shall be held accountable by Placer County Environmental Health for the adequate functioning of their system and repair or replacement of the system should it fail.
2. It is the responsibility of the homeowner to consult with their own legal counsel about the adequacy of protection afforded to them by warrantees and service agreements provided by on-site sewage system designers, installers, maintenance professionals, and manufacturers and distributors of proprietary devices. The County makes no representation or assurance concerning the adequacy of protection afforded the homeowner from said warrantees and service agreements.

3. The following disclosure statements will be included in recorded license agreements to inform customers of potential risks involved in utilization of an experimental system:
   a. Placer County has made every effort to assure its success by implementing an Experimental System Review Process. This system may or may not perform in the manner intended.
   b. Placer County is not responsible for any damages you may incur as a result of a defective installation or operation of system.
   c. For your own protection, consult with an attorney before signing any contracts, agreements, warrantees or guarantees related to the product and its installation.
   d. If you intend to transfer your property while the system is still EXPERIMENTAL, you are obligated to notify any potential owner of this system's designation as experimental and of all owner responsibilities.
   e. If the system is removed from the experimental system program, the property owner may be required to abandon the system and replace it with one approved by Placer County.
   f. The requirements developed for permitting and monitoring the specific type of experimental system utilized will be recorded as an attachment to the licensing agreement.

C. Quality Assurance
1. A treatment system may be considered to "fail" when Placer County Environmental Health determines it cannot reliably perform the conveyance, treatment, and/or dispersal function for which it was designed and approved. Causative problems with the treatment system may include mechanical malfunction, structural problems, reliability issues, maintenance deficiencies, or non-compliance with the effluent specifications contained in the review package.
2. If an individual treatment system "fails" as described above, Placer County Environmental Health will consider the homeowner to be the responsible party for system repair or replacement. However, nothing here prevents the homeowner from seeking recourse through service agreements and warrantees with the manufacturer, distributor, designer, or contractor.
3. When, in the opinion of the Placer County Environmental Health Director, the nature, number, or frequency of product failure is such that reconsideration of the treatment system by the advisory committee for continued inclusion in the Experimental System Program is warranted, the Director will request that the committee review the data and make recommendations. Recommendations could include modified or additional conditions for approval, extension of the monitoring period, expansion of the number of units to monitor under the program, and removal of the product from the Experimental System Program.
4. Noncompliance with the conditions of Experimental System approval, including failure to report or notify Environmental Health as stipulated within the condi-

tions of approval, will be considered grounds for reconsideration of the treatment system for continued inclusion in the Experimental System Program.

D. Experimental System Review Process

1. The review process steps are as follows:

   a. The applicant will submit a preliminary treatment system proposal to Placer County Environmental Health (staff). A fee to cover a portion of review costs may be assessed at this or a subsequent point in the review process.

   b. Staff will review the proposal for technical feasibility.

   c. If the proposal is determined feasible by staff, the applicant will prepare the Review Package and submit it to staff.

   d. Staff will review the Review Package and, if the packet is complete, distribute it to committee members at least two weeks prior to the next regularly scheduled Wastewater Advisory Committee (committee) meeting.

   e. The committee will study the Review Package and approve the system for inclusion in the Experimental System Program, request additional information, or determine that the proposal is not acceptable.

   f. If the committee recommends approval of the system for inclusion in the Experimental System Program, staff will prepare a set of conditions of approval for review by the committee.

   g. The committee will review the conditions prepared by staff and either suggest modification of the conditions or approval of the conditions.

   h. If the committee recommends approval of the conditions, staff will forward the committee's recommendation to the Regional Water Quality Control Board (RWQCB) and allow 30 days for review and comment by the Regional Board.

   i. At the conclusion of the 30 days, the Placer County Environmental Health Director (EH Director) will either authorize staff to approve the treatment system under specified conditions, based upon committee recommendations, or refer the RWQCB comments back to the committee for further review.

   j. If the EH Director authorizes staff to approve the treatment system under specified conditions, the review period will commence. A treatment system will be considered "utilized" when it is properly designed, installed, and receiving wastewater in accordance with its designed wastewater loading. Influent and effluent sampling and analysis requirements for each experimental treatment system will generally take place a minimum of two years from the time the treatment system is first utilized. All utilized treatment systems will continue to be designated as experimental systems until the total number of systems stipulated in the Conditions for Approval have been utilized for a minimum of two years.

k. During or at the conclusion of the review period, either the applicant or the EH Director may request review of the system and its performance by the committee.

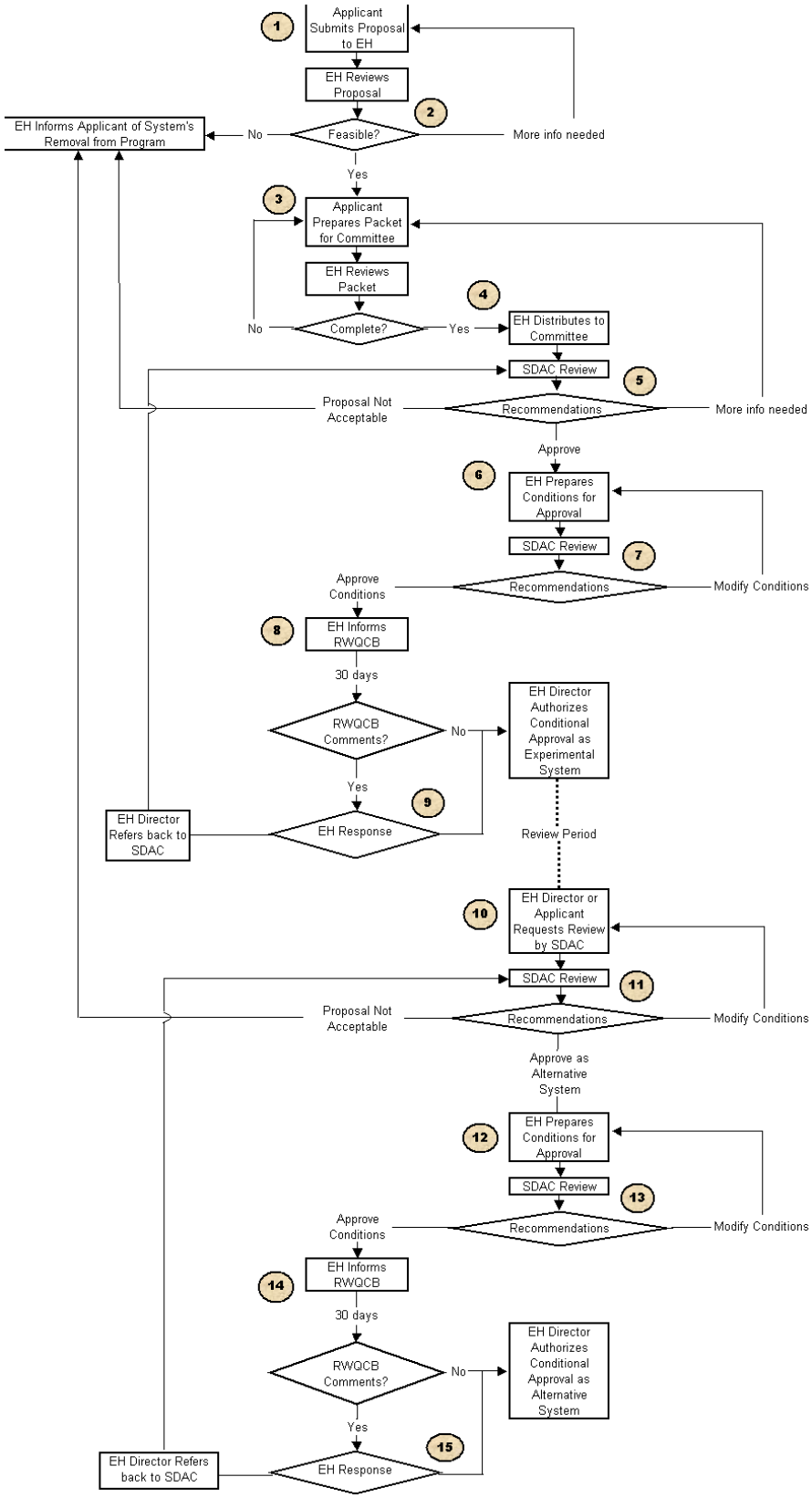
l. The committee may recommend the system be taken out of the Experimental System Program or that the conditions of approval be modified due to factors outlined in the preceding Chapter, or approval of the system as an Alternative System if all time, numerical, and performance conditions are met.

m. If the committee recommends the system be approved as an Alternative System, staff will prepare a set of conditions of approval for review by the committee.

n. The committee will review the conditions prepared by staff and either suggest modification of the conditions or approval of the conditions.

o. If the committee recommends approval of the conditions, staff will forward the committee's recommendation to the Regional Water Quality Control Board (RWQCB) and allow 30 days for review and comment by the Regional Board.

p. At the conclusion of the 30 days, the Placer County Environmental Health Director (EH Director) will either authorize staff to approve the treatment system as an Alternative System under specified conditions, based upon committee recommendations, or refer the RWQCB comments back to the committee for further review.


1
Applicant Submits Proposal to EH
EH Reviews Proposal
2
Feasible?
No
EH Informs Applicant of System's Removal from Program
More info needed
Yes
3
Applicant Prepares Packet for Committee
EH Reviews Packet
4
Complete?
No
Yes
EH Distributes to Committee
SDAC Review
5
Recommendations
Proposal Not Acceptable
More info needed
Approve
6
EH Prepares Conditions for Approval
SDAC Review
7
Recommendations
Approve Conditions
Modify Conditions
8
EH Informs RWQCB
30 days
RWQCB Comments?
No
EH Director Authorizes Conditional Approval as Experimental System
Yes
9
EH Response
EH Director Refers back to SDAC
Review Period
10
EH Director or Applicant Requests Review by SDAC
SDAC Review
11
Recommendations
Proposal Not Acceptable
Modify Conditions
Approve as Alternative System
12
EH Prepares Conditions for Approval
SDAC Review
13
Recommendations
Approve Conditions
Modify Conditions
14
EH Informs RWQCB
30 days
RWQCB Comments?
No
EH Director Authorizes Conditional Approval as Alternative System
Yes
15
EH Response
EH Director Refers back to SDAC

## Chapter 26. Off-Site Sewage Easements

A. General Statement

When a system cannot be located on the lot or parcel to be served, an off-site easement may be considered.

1. Off-site easements may not be considered when creating new lots or parcels.

   EXCEPTION: Easements in common or open spaces may be considered in Planned Developments as defined in Placer County Zoning Ordinance.

2. Whenever a system crosses a property line separating properties under different ownership, a recorded easement and covenant against conflicting uses shall be provided. For properties under common ownership a recorded deed restriction shall be provided.

3. Exhibits and legal descriptions of easements and deed restrictions shall be prepared by a licensed land surveyor. Unless otherwise indicated by the Division, the applicant shall flag or otherwise delineate the easement area for field inspection.

## Chapter 27. Large System Requirements

A. General Statement

A large system is a system with a projected daily sewage flow greater than two thousand five hundred (2,500) gallons from one residential or commercial facility.

B. Permit Application Procedures

Application shall be made to the Division on forms provided by the Division. Each application must be completed in full, signed by the applicant, and accompanied by the following:

1. The appropriate filing fee;
2. A narrative describing the details of the proposed project;
3. A site approval report;
4. A site development plan prepared by a consultant. Requirements of Chapter 3 shall apply to large system plans; and
5. A written assessment of the impact of the proposed system upon the quality of public waters and public health, (e.g. a groundwater mounding analysis and/or a nitrate study, etc.).

C. Alternative Design Requirements

Unless otherwise authorized by the Division, designs for large systems shall at a minimum meet all of the following:

1. Large systems shall be designed utilizing a pressurized distribution system in accordance with Chapter 11;
2. The disposal fields shall be divided into relatively small, approximately equal sized units, which are dosed alternately;
3. The system shall have at least two (2) alternating pumps;

4. Unless otherwise specified, septic tank design, materials, and construction shall conform to the provisions of Chapter 28. The Division shall review proposed tank designs and may impose certain standards to carry out the purposes of this Manual;
5. The project shall comply with all other Division requirements; and
6. The Division may require review by Regional Water Quality Control Board.

D. Installation Requirements

Construction shall be in conformance with the permit.

E. Inspection Requirements

Unless otherwise indicated, inspections and issuance of a Certificate of Satisfactory Completion shall be in conformance with Chapter 6.

## Chapter 28. Septic Tank Materials And Construction

A. General Statement

The requirements of this Chapter shall apply to all septic tanks manufactured for use in Placer County unless otherwise indicated in this Manual.

B. Materials

Septic tanks shall be precast reinforced concrete or other material approved by the Division. Wood, metal, fiberglass, and cast-in-place septic tanks are prohibited. Polyethylene tanks may be considered on a case-by-case basis.

C. Tank Construction/Design Specifications

1. Precast concrete tanks shall have a minimum wall, compartment and bottom thickness of two and one-half (2-1/2) inches, and shall be adequately reinforced. The top shall be at least four (4) inches thick.
2. Septic tanks shall have a minimum of two compartments. Installation of multiple single compartment tanks in a series is not acceptable, unless approved by Division prior to installation. The first compartment shall have a liquid capacity of two-thirds (2/3) of the total required liquid capacity, as measured from the invert of the outlet fitting.
3. Each compartment shall have access provided by a manhole having not less than eighteen (18) inches across its shortest dimension unless otherwise approved by the Division.
4. Each compartment shall be provided with a concrete (or other material approved by the Division) watertight riser, extending to the ground surface or above, with a minimum inside horizontal measurement equal to or greater than the access manhole. All joints shall be properly sealed with a sealant and/or an interlocking mechanism approved by the Division. Cement grout sealing alone is not an acceptable method of sealing joints. Surface water shall be diverted away from the riser cover by creating a sloping surface away from the riser, or extending the riser three (3) inches above ground surface. The cover shall be securely fastened with stainless steel or other corrosion resistant fasteners to make the riser vandal, tamper, and child resistant. No cover shall exceed seventy-five (75) pounds.

5. No riser shall have an inside horizontal dimension of less than twenty-four (24) inches. The liquid depth of any compartment shall be at least thirty (30) inches. Liquid depths greater than seventy-two (72) inches shall not be considered in determining the working liquid capacity.
6. Septic tanks shall be watertight. They shall be built such that any construction joints will be above the effluent level. An in-situ watertight test may be required of any septic or pump tank. Testing may require that the tank be filled with water 1 inch into the riser or that a county approved vacuum test be performed.
7. Septic tanks shall be capable of supporting an earth load of at least three hundred (300) pounds per square foot when the maximum coverage does not exceed three (3) feet. Tanks installed with more than three (3) feet of cover shall be reinforced to support the additional load. Tanks, risers, and riser covers installed beneath paved surfaces subject to vehicular traffic (e.g., driveways and vehicle turnarounds) shall be engineered to support the additional load.
8. At least ten (10) percent of the inside volume of the tank shall be above liquid level to provide scum storage.

D. Size

1. Septic tank size shall be determined in accordance with Chapter 8 for single-family dwellings or Chapter 9 for commercial facilities.
2. The liquid depth of any compartment shall be at least thirty (30) inches. Liquid depths greater than seventy-two (72) inches shall not be considered in determining the working liquid capacity.

E. Fittings

1. The inlet and outlet fittings shall be of Schedule 40 PVC, Schedule 40 ABS, or other materials approved by the Division, with a minimum diameter of three (3) inches.
2. The distance between the inlet and outlet fittings shall be equal to, or greater than, the liquid depth of the tank.
3. All fittings shall be secured with a sealant approved by the Division and shall be constructed so as to be watertight. Tank fitting locations shall be properly engineered to ensure the structural integrity of the tank.
4. The inlet fitting shall be a "sanitary tee" with minimum pipe diameter no less than the connecting building sewer nor less than three (3) inches. It shall extend at least four (4) inches above and twelve (12) inches below the liquid level.
5. The outlet fitting shall be a "sanitary tee" with minimum pipe diameter no less than the connecting effluent sewer pipe nor less than four (4) inches in order to accommodate an effluent filter. The outlet fitting shall extend at least four (4) inches above liquid level, and below liquid level a distance approximately equal to the flow level through the baffle. The diameter of the vertical leg extending below the liquid level shall not be less in size than the building sewer nor less than four (4) inches.

6. An effluent filter may be required prior to discharge of the effluent to the effluent sewer. It shall be commercially designed and manufactured, intended for effluent filtration, and be readily accessible for inspection and cleaning.
7. The invert of the inlet fitting shall not be less than one (1) inch and preferably three (3) inches above the invert of the outlet fitting.
8. Sanitary tees shall be accessible through the manhole access riser.

F. Baffles

A minimum three (3) inch diameter "tee" fitting or baffle slot (with the same opening area as the fitting) shall be placed in the common compartment (baffle) wall, using the same materials specifications as required for the outlet fitting. The invert of the "tee" fitting or baffle slot shall be located approximately at fifty (50) percent of the liquid depth. There shall be a minimum two-inch vent opening in the baffle above the liquid level. The baffle shall be constructed of the same material as the tank and extend a minimum of four (4) inches above the liquid level.

G. Markings

All septic tanks shall be marked on the uppermost tank surface with the liquid capacity of the tank and the manufacturers business name.

H. Tank Documentation

For septic tanks proposed for use in Placer County, or when a revised tank design is proposed the commercial manufacturer of the septic tank shall provide the Division with written documentation that the septic tank design, materials and construction comply with all requirements of this Manual. The manufacturer shall provide a set of plans and specifications prepared by a California registered professional engineer, for each tank design and a set reflecting any subsequent revisions. Plans shall include at a minimum: dimensions, reinforcing, structural calculations, materials specifications and the appropriate fee. The Division may conduct periodic manufacturer's facility inspection to verify compliance with this Manual.

## Chapter 29. Distribution Box Materials And Construction

A. Distribution boxes shall be constructed of concrete or other materials acceptable to the Division.

B. Distribution boxes shall be watertight, and designed to accommodate the necessary distribution laterals and expected flows. The top, walls, and bottom of concrete distribution boxes shall be at least one and one-half (1-1/2) inches thick.

C. For level sites, the distribution boxes shall be installed for parallel distribution to the disposal trenches. For sloping sites, the distribution boxes shall be installed so that the uppermost disposal trench receives effluent prior to the effluent being discharged to the subsequent, lower disposal trenches.

D. Each distribution box shall be provided with a sump extending at least two (2) inches below the invert of the outlets.

E. For initial use of a manufacturer's distribution box design proposed for use in Placer County, or when a revised box design is proposed for same, the commercial manufacturer

of the prefabricated box shall provide the Division with written documentation that the box design, materials and construction comply with all requirements of this Manual.

F. All distribution boxes shall be bedded level on undisturbed soil, aggregate with a minimum of 90% compaction, or on concrete.

## Chapter 30. Diversion Valve Materials And Construction

A. Diversion valves shall be constructed of durable material and be of a design approved by the Division. They shall be corrosion-resistant, watertight, and designed to accommodate the inlet and outlet pipes.

B. Each diversion valve shall have a positive stop.

C. The manufacturer's name shall be marked on the cover.

D. For initial use of a manufacturer's diversion valve design proposed for use in Placer County, or when a revised valve design is proposed for same, the commercial manufacturer of the prefabricated valves shall provide the Division with written documentation verifying that the valve design, materials and construction comply with all requirements of this Manual.

## Chapter 31. Dosing/Pump Tank Materials And Construction

A. Dosing tanks shall be constructed in accordance with the minimum standards of Chapter 28 with the exception that the access manhole for the dosing tank shall be a minimum twenty (20) inches in diameter.

B. Each dosing tank employing one (1) or more pumps shall have a liquid capacity sufficient to deliver the design dose, and have a minimum additional capacity of one day’s design flow above the high level alarm.

C. Each dosing tank shall be marked on the uppermost surface with the liquid capacity and manufacturer's business name, or a number assigned by the Division.

D. For dosing tanks proposed for use in Placer County, or when a revised tank design is proposed, manufacturer of the tank shall provide the Division with written documentation that the tank design, materials and construction comply with all requirements of this Manual. The manufacturer shall provide a set of plans and specifications prepared by a registered professional engineer for each tank design and a set reflecting any subsequent revisions. The appropriate fee shall accompany plans.

## Chapter 32. Effluent Pump, Control, And Alarm Materials And Construction

A. General Statement

Unless otherwise specified, effluent pump, control box, and alarm materials and construction shall at minimum be in conformance with this Chapter.

B. Pumps, Controls, and Alarms

Electrical components used in systems shall comply with the Uniform Electrical Code, and the following provisions:

1. Motors shall be continuous-duty, with overload protection.

2. Pumps shall have durable impellers of bronze, cast iron, or other materials approved by the Division.
3. Submersible pumps shall be provided with an easy, readily accessible means of electrical and plumbing disconnect, and a non-corrosive lifting device as a means of removal for servicing.
4. For pressure distribution systems, a corrosion-resistant screen or other filter device shall protect the pump. The screen shall have at least twelve (12) square feet of surface area, with one-eighth (1/8) inch openings. The use of a screen is not required if the pump does not discharge into a pressurized distribution system, and the pump has a non-clog impeller capable of passing a 3/4 inch diameter solid sphere.
5. Pumps shall be automatically controlled by sealed mercury float switches with a minimum mercury tube rating of twelve (12) amps at one hundred fifteen (115) volts AC or by a Division-approved equivalent.
6. Pumps shall have automatically resetting audible and visual high water level alarm with manual silence switch that is located in or near the building served by the pump. The audible alarm only may be user cancelable. The electrical box for the pump and alarm system shall not be located in an environment that may damage the components.
7. Wiring must be of proper construction and gauge and permanently fixed to a supporting structure under permit from the local Administrative Authority.
8. The pump and alarm must be connected to separate circuits.
9. There shall be a non-resettable digital pump cycle counter in the electrical box.
10. There shall be a manual override switch in the electrical box to facilitate dosing control during inspections.

## Chapter 33. Pipe Materials And Construction

A. General Statements

Unless otherwise specified, piping shall consist of materials and be constructed in conformance with the standards of this Chapter. All piping shall be free of defects or damage. All connection of pipes of different diameters shall be made with the proper fittings.

B. Building Sewer Pipe

The building sewer pipe is within the jurisdiction of the Building Department and shall be constructed with materials in conformance to building sewer standards, as identified in the Uniform Plumbing Code by the Building Department.

C. Effluent Sewer Pipe, Header Pipe, and Fittings

Header pipe shall extend a minimum of five (5) feet out of the distribution box. Effluent sewer, header pipe and fittings shall be a minimum three (3) inch diameter, watertight and one of the following:

1. Schedule 40 PVC that meets the most current ASTM D-1785 for three (3) inch pipe and D-2672 for minimum four (4) inch pipe.

2. Schedule 40 Acrylonitrile-Butadiene-Styrene (ABS) that meets the most current ASTM Specification D-2468.
3. ASTM SDR 35 with solvent-welded or rubber-gasketed joints.
4. Other material approved by the Division.

NOTE: The first ten-feet of effluent sewer pipe extending from the septic tank outlet shall only be either "(1)" or "(2)". When the first distribution box is less than ten feet then the effluent sewer pipe shall extend to the first distribution box.

All pipe and fittings shall be capable of passing a deflection test withstanding three hundred-fifty (350) pounds per foot without cracking or collapsing by using the method described in ASTM 2412. Markings shall meet requirements established in ASTM Specification D-2719, subsections 9.1.1, 9.1.2 and 9.1.4. The manufacturer of polyvinyl chloride pipe may be required to certify in writing to the Division, that pipe and fittings provided for use in absorption facilities within the County comply with all requirements of this Chapter.

D. Distribution Piping

Distribution piping for gravity flow systems shall be a minimum three (3) inches diameter Polyethylene (PE) pipe that meets the most current ASTM Specifications F-810, or other material approved by the Division. The pipe described above shall have two (2) rows of holes spaced one hundred-twenty (120) degrees apart and sixty (60) degrees on either side of a centerline. For distribution pipe, a line of contrasting color shall be provided on the outside of the pipe along the line furthest away and parallel to the two (2) rows of perforations. Markings, consisting of durable ink, shall cover at least fifty (50) percent of the length of the pipe. Markings may consist of a solid line, letters, or a combination of the two. Intervals between markings shall not exceed twelve (12) inches. The holes of each row shall not be more than five (5) inches on center and shall have a minimum diameter of one-half (1/2) inch.

E. Pressure Transport Pipe, Pressure Distribution Manifolds, and Pressure Distribution Laterals

Pressure transport pipe, pressure distribution manifolds, and pressure distribution lateral (piping and fittings), shall meet the most current requirements for schedule 40 PVC pressure pipe as identified in ASTM Specifications D-1785, or other material approved by the Division. All pressure distribution laterals and all pressure transport and manifold piping shall be adequately sized for the design flow.

## Chapter 34. Vault Privy And Portable Toilet Materials And Construction

A. General Requirements for Vault Privy and Portable Toilet Shelters

1. Structures shall be free of hazardous surface features, such as exposed nail points, splinters, sharp edges, and rough or broken boards, and shall provide privacy and protection from the elements.
2. Building ventilation shall be equally divided between the bottom and top halves of the room. All vents shall be screened with sixteen (16) mesh screen of durable material.

3. Buildings shall be fly and rodent proof, and shall have self-closing doors with an inside latch.
4. Vaults shall be vented to the outside atmosphere by a flue or vent stack having a minimum inside diameter of four (4) inches.
5. Interior floors, walls, ceilings, partitions, and doors shall be finished with readily cleanable impervious material resistant to wastes, cleansers and chemicals. Floors and risers shall be constructed of impervious material and in a manner that shall prevent entry of vermin.
6. The seat opening shall be covered with attached, open-front toilet seats with lids, both of which can be raised to allow use as a urinal.
7. A toilet tissue holder shall be provided for each seat.

B. Additional Provisions for Vault Privy Shelters

In addition to complying with the requirements of Chapter 34, vault privies shall be provided with:

1. Vents equal in area to a minimum of three (3) square feet; and
2. A minimum clear space of twenty-four (24) inches between multiple-unit installations and a clear space of twelve (12) inches from the seat opening to the side building wall in single and multiple units.

C. Additional Provisions for Portable Toilet Shelters

Portable shelters may be prefabricated, skid mounted, or mobile. In addition to complying with the requirements of Chapter 34, portable toilet shelters shall:

1. Provide screened ventilation to the outside atmosphere having a minimum area of one (1) square foot per seat;
2. Provide a minimum floor space outside of the riser of nine (9) square feet per seat; and
3. Provide separate compartments with doors and partitions or walls of sufficient height to ensure privacy in multiple-unit shelters except that separate compartments are not required for urinals.

D. General Requirements for Vault Privy and Portable Toilet Facilities

1. They shall have watertight chambers constructed of reinforced concrete, plastic, fiberglass, metal, or other material of acceptable durability and corrosion resistance, approved by the Division, and designed to facilitate the removal of the wastes.
2. Blackwater shall be stored in an appropriate chamber until proper removal for final disposal elsewhere. Wastes shall be removed from the chamber as necessary to prevent overflow.
3. All surfaces subject to soiling shall be impervious, easily cleanable, and readily accessible.

E. Additional Provisions for Vault Privy Facilities

In addition to meeting the provisions of Chapter 34, vault privy facilities shall meet the following:

1. The capacity of vaults shall be adequately sized to accommodate the proposed use.
2. A caustic shall be added routinely to vault chambers to control odors.

F. Additional Provisions for Portable Toilet Facilities

In addition to meeting the provisions of Chapter 34, portable toilets shall meet the following:

1. Have toilet bowls constructed of stainless steel, plastic, fiberglass, or ceramic or of other material approved by the Division;
2. Waste passages shall have smooth surfaces and be free of obstructions, recesses or cross braces which would restrict or interfere with flow of blackwater;
3. Biocides and oxidants shall be added to waste detention chambers at rates and intervals recommended by the manufacturer;
4. Chambers and receptacles shall provide a minimum storage capacity of fifty (50) gallons per seat; and
5. Portable shelters housing chemical toilets shall display the business name of the licensed sewage disposal service that is responsible for servicing them.

## Chapter 35. Artificial Drain Design, Materials And Construction

A. General Statement

For the purposes of this Manual, an artificial drain means a curtain drain or vertical drain that drains or diverts groundwater from the disposal field.

B. General Criteria for Approval of an Artificial Drain

Unless otherwise approved, an artificial drain shall meet the minimum requirements as follows:

1. All artificial drains shall be designed by a consultant and generally conform to the requirements of alternative systems, Chapter 9.
2. Artificial drains shall meet the minimum setback requirements to disposal area and replacement area and septic tank as indicated in Table 1 (contained in Chapter 36). The discharge pipe and drainage trench pipe are integral parts of the system, but do not need to meet setback requirements to property lines, streams, lakes, ponds or other surface water bodies.
3. All other requirements for system approval, except depth to groundwater, can be met. However, after the drain is installed, the groundwater levels shall conform to the requirements for vertical separation to groundwater for the proposed system.
4. For a curtain drain, the site will allow discharge to the ground surface.
5. The Division has the discretion of requiring demonstration that a proposed artificial drain is effective prior to issuing a permit.

C. Design, Construction, and Materials Requirements for Artificial Drains

1. The artificial drain shall be filled with filter material. Prior to backfilling the trench, the filter material shall be enveloped and covered with filter fabric. A minimum of six (6) inches of soil cover shall be placed over each trench.

2. A four (4) inch minimum diameter Polyvinyl Chloride (PVC) or Polyethylene (PE) perforated pipe shall be laid the entire length of the trench with two (2) inches of gravel underneath the pipe. EXCEPTION: This provision is not applicable to a vertical drain that penetrates a limiting layer and discharges into an underlying permeable soil.
3. The trench shall be situated so that captured water drains by gravity-flow out of outlet pipes. Trench bottoms shall maintain a minimum of one (1) percent slope throughout the drainage trench. In areas where the outlet pipe will be subject to damage, the pipe shall be adequately protected. EXCEPTION: This provision is not required for a vertical drain that penetrates a limiting layer and discharges into an underlying permeable soil.
4. The trench shall be a minimum of twelve (12) inches wide. For a curtain drain, it shall extend from ground surface at least 6 inches into a limiting layer. For a vertical drain, the trench shall penetrate through the limiting layer into a permeable soil.
5. The trench shall be installed upslope of the disposal area to be protected.

D. Discharge Outflow

In the event that the discharge outflow from a curtain drain will impact a neighboring property, the trench outlet from a curtain drain shall only discharge into a drainage channel or other conveyance designed for the transport of water, unless otherwise approved by the Division.

## Chapter 36. Tables

Table One: Features Requiring Setback: Min. Horizontal Separation Distance In Feet *

| Distance Required From: | From Disposal Field Initial, Replacement, MUSDA | From Septic Tank And Sand Filter | From Seepage Pit |
|---|---|---|---|
| Wells | | | |
| Public well | 150’ | 100’ | 200’ |
| Private well | 100’ | 50’ | 150’ |
| Other wells, excluding monitoring wells | 100’ | 50’ | 150’ |
| Surface waters[1] | | | |
| Reservoirs, lakes, or perennial streams | 100' | 100’ | 150’ |
| Springs or Ponds upgradient | 50’ | 50’50’ | 100’ |
| Springs or Ponds downgradient | 100’ | 50’ | 100’ |
| Intermittent streams, drainage swales | 50’ | | 50’ |
| Artificial drains--Vertical/Curtain drains | | | |
| Upgradient of system | 15’ | 15’ | NA |
| Downgradient of system | 50' | 25' | NA |
| Water canals[2] | | | |
| Flat area | 50’ | 50’ | 100’ |
| Sloping area | | | |

| Distance Required From: | From Disposal Field Initial, Re-placement, MUSDA | From Septic Tank And Sand Filter | From Seepage Pit |
|---|---|---|---|
| -Upgradient | Clear ROW[3] | Clear ROW[3] | 100’ |
| -Downgradient | 100’ | 50’ | 100’ |
| Cuts manmade in excess of 2.5 feet (top of downslope cut) or escarpments | 4 X height[4] of the bank, to a maximum of 50' | 20’ | 4 X height[4] of the bank, to a maximum of 50' |
| Property lines | | | |
| Adjacent property with public water | 10’ | 5’ | 10 |
| Adjacent property with private water | 10’[5] or 50’ | 10’ | 10’[5] or 75’ |
| Foundation lines of any structure including garages, out-buildings,** paved areas | 8’ | 5’[7] | 5’ |
| Swimming pools | | | |
| In-ground | 20’ | 20’ | 20’ |
| Above-ground | 5’ | 5’ | 5’ |
| All Water lines | 10’[8] | 5’[7] | 10’ |
| Easements[9] | Clear | Clear | Clear |

FOOTNOTES:

* If a setback is not specified in this Table, the most recently Board of Supervisors-adopted Uniform Plumbing Code setback will be applied.

** No setback requirements for a septic tank to a paved surface

1. Setbacks from streams and creeks shall be measured from bank drop-off or mean yearly high water mark
2. Unless otherwise indicated in this table, in the case of flat ground surface and when a different distance is given for upgradient and downgradient, the greater setback distance shall apply.
3. “ROW” = Right of Way
4. The height (in feet) of the cut or escarpment as measured from the toe of the cut or escarpment vertically to the projection of the natural ground slope.
5. The ten (10) feet separation applies where adjacent parcels have been developed with a dwelling and approved water supply.. The 50-feet separation shall be used when adjacent parcels have not been so developed. For subdivisions, disposal fields may be ten (10) feet from interior property lines in private well areas if a well has been drilled on the affected parcel and meets Division standards for an approved domestic water supply. The greater setback shown above shall apply to parcels adjacent to the subdivision. However, written approval from any affected, adjacent property owner to allow a reduction of the required setback can be approved by the Division.
6. The Division encourages the placement of septic tanks and other treatment units as close as feasible to the minimum separation from the building foundation in order to minimize possible clogging of the building sewer.
7. Unless otherwise approved by the Division, crossing of water lines and effluent sewer lines is prohibited.
8. A system may be installed underneath overhead power lines or cross other utilities (e.g., canals) providing all of the following conditions are met:
   - Written authorization is received from the utility company operating and maintaining the utility affected or for which the easement or restriction was granted;
   - The Division determines that the encroachment is necessary and there is no other viable area in which to install the system; and

- All construction modifications required by the Division and the affected utility company(ies) are instituted to carry out the purposes of this Manual.

Table Two: Design Flows

| Type of Business or Facility | Minimum Flow (Gallons per Day) |
|---|---|
| Airports, bus terminals, train stations | 8 (per employee) |
| Bathhouses and swimming pools | 10 (per person) |
| Camps (4 persons per campsite, where applicable) | |
| -with central comfort stations | 35 (per person) |
| -with flush toilets, no showers | 25 (per person) |
| -construction camps (semi-permanent) | 50 (per person) |
| -day camps (no meals served) | 15 (per person) |
| -resort camps (night and day) with limited plumbing | 50 (per person) |
| -luxury camps | 100 (per person) |
| Churches | |
| -with kitchen | 15 (per seat) |
| -without kitchen | 5 (per seat) |
| Country clubs | |
| -per resident member | 100 |
| -add per nonresident member present | 25 |
| -add per employee | 20 (per 8 hour shift) |
| Dentist office | |
| -per wet chair | 200 |
| -add per non-wet chair | 50 |
| Dwellings | |
| Guest house, for authorization notice approval (one bedroom) | 200 |
| Guest house, for connection to new system (more than 1 bedroom) | 300 min or 150/bedroom |
| Boarding houses | 150 (per bedroom) |
| -additional for non-residential boarders | 10 (per person) |
| Rooming houses | 80 (per person) |
| Condominiums, apartments and other dwellings except for single-family dwellings | 300 (per unit) |
| Single family dwellings, 1-2 bedrooms | 300 |
| -with more than 2 bedrooms | 150 each additional bedroom |
| Secondary dwelling with individual system, 1-2 bedrooms | 300 |
| -with more than 2 bedrooms | 150 each additional bedroom |
| Secondary dwelling, for authorization notice approval (requires separate septic tank) | 200 |
| Factories | |
| -with shower facilities, no food service or industrial wastes | 35 (per person, per shift) |
| -without shower facilities, no food, service or industrial wastes | 15 (per person, per shift) |

| Type of Business or Facility | Minimum Flow (Gallons per Day) |
|---|---|
| Hospitals | 250 (per bed space) |
| Hotels or motels | |
| -with private baths | 120 (per room) |
| -without private baths | 100 (per room) |
| Institutions other than hospitals | 125 (per bed) |
| Laundries, self-service washing machines | 500 (per machine) |
| Mobile home parks | 250 (per space) |
| Parks, public picnic areas | |
| -with toilet wastes only | 5 (per person) |
| -with bathhouses, showers and flush toilets | 10 (per person) |
| Restaurants | |
| -with multi-use utensils | 50 (per seat) |
| -with single service utensils | 25 (per seat) |
| -with bars and/or cocktail lounges | 50 (per seat) |
| -drive-in restaurant | 50 (per car space) |
| Retail stores | |
| -for customer | 650 (per toilet) |
| -add for each employee | 15 (per shift) |
| (add 100 gallons/day for each utility sink) | |
| Schools | |
| -boarding | 100 (per person) |
| -day (without gyms, cafeterias or showers) | 15 (per person) |
| -day (with gyms, cafeterias and showers) | 25 (per person) |
| -day (with cafeteria, no gym or showers) | 20 (per person) |
| Service stations | 10 (per vehicle served) |
| Swimming pools and bathhouses | 10 (per person) |
| Theaters | |
| -movie | 5 (per seat) |
| -drive-in | 20 (per car space) |
| Recreational vehicle parks | |
| -without individual water and sewer hookups | 50 (per space) |
| -with individual water sewer hookups | 100 (per space) |
| Workers | |
| -Construction (temporary camps) | 50 (per person) |
| -day, at schools and offices | 15 (per shift) |

## Chapter 37. Definitions Of Terms

"Absorption Facility": a system of perforated piping, distribution units, or other absorption systems for receiving the flow from septic tanks or other treatment facilities and designed to distribute effluent for absorption by the soil.

"Alteration": expansion and/or modification of an existing system, or any part thereof.

"Alternative System": any Division-approved system that is not a standard system or experimental system.

"American Society for Testing Materials" (ASTM): a technical organization with headquarters located at 1916 Race Street, Philadelphia, Pennsylvania, 19103, which publishes national standards for the testing and quality assurance of construction materials.

"Applicant": an owner or owner's authorized representative.

“Artificial Drain": any artificial drainage feature or structure that intercepts and concentrates groundwater or surface water. For example: driveways, roads, road ditches, agricultural drain tile, cut banks, and curtain drains.

“Authorization Notice”: means a written document issued by the Division which establishes that an existing on-site sewage disposal system appears adequate to serve the purpose for which a particular application is made.

"Bedrock": unweathered solid rock that is impermeable or has very slight porosity. If present, fractures are tight, dry, and cemented. Cannot be dug using hand tools.

"Bedroom": any room designated as such by the local Administrative Authority having jurisdiction.

"Blackwater": wastewater contaminated with human or kitchen wastes, generally originating from toilets and kitchen sinks. It includes, but is not limited to, wastewater discharges from kitchen sinks, garbage grinders, water closets, toilets, urinals or similar fixtures alone or in combination with other wastewater.

"Building Sewer": that part of the system, which conveys sewage into a septic tank or other treatment facility.

"Chemical Toilet Facility": a non-flushing, non-recirculating toilet facility wherein blackwater is deposited directly into a chamber containing a solution of water and chemicals.

“Clay”: a soil separate consisting of particles less than 0.002 mm in equivalent diameter. See “Soil Texture”

"Claypan": a dense, compact layer in the subsoil having a much higher clay content than the overlying material, from which it is separated by a sharply defined boundary. Claypans are usually hard when dry, and plastic and sticky when wet. Also, they usually impede the movement of water and air, and the growth of plant roots.

“Cluster System”: an on-site sewage system serving two (2) or more sources by any method, which meets State and local minimum standards, excepting a primary and secondary dwelling sharing facilities on the same lot or parcel.

"Commercial Facility": any structure or building, or any portion thereof, other than a single-family residence.

"Conditions Associated With Saturation":

- reddish brown or brown oxidized soil horizons with dull gray zones of redox depletions (chromas of 2 or less[1]), and red or yellowish red zones of redox concentrations; or
- reduced, or iron-depleted, horizons of gray, blue, or olive colors (chromas of 2 or less[1]) with dull red, yellowish red, or brown zones of redox concentrations; or
- organic soils and dark-colored soils very high in organic matter.

  (Reference: Kollmorgen Instruments Corporation, Munsell[R] Soil Color Chart, 1990, and amendments)

"Consultant": one of the following persons (exclusive of Division personnel)

- Certified Engineering Geologist,
- Certified Professional Soil Scientist,
- Registered Civil Engineer,
- Registered Environmental Health Specialist, or
- Registered Geologist

"Contractor": a person who possesses an active Class A, or C-42 contractor's license in accordance with the provisions of the California Business and Professions Code.

"Curtain Drain": an artificial drain installed upslope from a disposal field to intercept and divert ground water away from the absorption facility.

"Cut-Manmade": a land surface resulting from mechanical land shaping operations.

"Deep Trench System": a system with disposal trenches greater than thirty (30) inches deep.

"Design Capacity": the maximum quantity of daily sewage flow that a system is designed to handle.

"Division": the Placer County Division of Environmental Health, it's director and designated employees.

"Director": the Director of the Placer County Division of Environmental Health or his/her designated employee.

"Disposal Area": the entire area used for underground dispersion of the liquid portion of sewage.

"Disposal Field" (AKA leachfield): a system of disposal trenches.

"Disposal Trench": a ditch or trench with vertical sides and substantially flat bottom designed to receive sewage effluent.

"Distribution Box": a structure that receives septic tank or other treatment facility effluent and distributes it to the disposal area.

"Distribution Pipe or Lateral Pipe": a perforated pipe used in the dispersion of septic tank or other treatment facility effluent into disposal trenches.

"Distribution Unit": a distribution box, dosing tank, diversion valve or box, header pipe, effluent lift pump or other means of transmitting septic tank or other treatment unit effluent from the effluent sewer to the distribution pipes.

"Dosing Tank": a watertight receptacle placed after a septic tank or other treatment facility equipped with a pump designed to periodically discharge treated effluent.

"Drainage Swale": any observable drainage course where water flows at some period during the year, but not necessarily in direct response to precipitation.

“Drain Rock”: a commonly used term identified in this manual as “Filter Material.”

"Dwelling": any structure or building or any portion thereof which is used, intended, or designed to be occupied for human living purposes including, but not limited to, houses, houseboats, boathouses, mobile homes, travel trailers, hotels, motels, and apartments.

“Effective Absorption Area": the bottom area of a disposal trench, except for deep trench systems. For deep trench systems, this means the sidewall area below the distribution pipe.

"Effective Soil Depth": the depth of soil material from ground surface that effectively provides filtration of effluent. Effective soil excludes soil layers that meet the criteria for "Soil With Rapid Permeability" and "Conditions Associated With Saturation" and “Limiting Layers.”

"Effluent Lift Pump": a pump used to lift septic tank or other treatment facility effluent to a higher elevation.

"Effluent Sewer": that part of the system of drainage piping that conveys sewage effluent from a septic tank or other treatment facility into a distribution unit or an absorption facility.

"Escarpment": any naturally occurring slope which extends nearly vertical, and which is characterized by a long cliff or steep slope which separates two (2) or more comparatively level or gently sloping surfaces, and may intercept one (1) or more layers that limit effective soil depth.

"Existing Lot or Parcel": a lot or parcel legally created prior to the effective date of this Manual.

"Existing System": any installed system constructed in conformance with the rules, laws and local ordinances in effect at the time of construction.

"Expansive Clay Soil": mineral soil that swells and shears when wet, and shrinks and develops cracks when dry, forming slickened sides and wedge-shaped structure. Expansive clay soil is very hard or extremely hard when dry, very firm when moist, and very sticky and very plastic when wet. When wet, expansive clay soil is massive, and cracks and structure may not be evident.

"Experimental System": a system of technological innovation. The system is recognized and approved by the Division as part of a program of experimentation for the purpose of obtaining data for the development of alternative systems.

“Failing System”: any system which discharges untreated or inadequately treated sewage or septic tank effluent directly or indirectly onto the ground surface, into protected waters, or into a dwelling. Also, any system not operated in compliance with permit conditions including, but not limited to, operation, maintenance and monitoring requirements, use of unapproved components, or unapproved modifications to the originally permitted design.

"Filter Material": clean, washed gravel or crushed rock ranging in size from three quarters (3/4) to one and one-half (1-1/2) inches. The material shall be comprised of non-reactive materials, (e.g., limestone would be considered reactive). Also commonly referred to as drain rock.

"Final Map": this Manual adopts by reference the explanation and provisions as they appear in the Placer County Code, and amendments thereto.

"Fractured Bedrock": moderately to slightly weathered bedrock that usually is hard and fractured, but not impermeable to water. Not diggable with hand tools.

"Fragipan": a natural subsurface horizon with high bulk density and/or high mechanical strength relative to the horizons above, seemingly cemented when dry, but when moist showing a moderate to weak brittleness. Fragipans are low in organic matter, mottled, slowly or very slowly per-

meable to water, considered to be root restricting, and usually show occasional or frequent bleached cracks forming polygons.

"Graywater": wastewater, exclusive of blackwater or industrial waste, deposited into plumbing drain systems or exiting directly from wastewater generating appliances. It includes, but is not limited to, wastewater discharge from washing machines, bathtubs, showers, bathroom wash basins, and laundry tubs.

"Graywater Disposal System": an on-site sewage disposal system consisting of a tank and shallow disposal field meeting the requirements of the State Graywater Law.

"Groundwater": a layer or lens of soil or fractured bedrock in which all open spaces are filled with water. The thickness and extent of groundwater may vary seasonally or periodically in response to changes in the rate or amount of groundwater recharge or discharge.

"Hardpan": a relatively hard, impervious, and often clayey layer of soil lying below the surface, produced as result of cementation of soil particles by precipitation of relatively insoluble materials such as silica, iron oxide, calcium carbonate, and organic matter. Its hardness does not change appreciably with changes in moisture content, and it does not slake or become plastic when mixed with water.

"Header Pipe": the tight-jointed part of the sewage drainage conduit which receives septic tank effluent from the distribution box, or effluent sewer and conveys it to and within the disposal area.

"Health Officer": the Health Officer of Placer County, or his/her designee.

"Holding Tank": a watertight receptacle designed to receive and store sewage to facilitate disposal at another location.

"Horizon": see "Soil Horizon"

"Individual System": a system that is not a cluster system

"Installer": see Contractor.

"Intermittent Stream": any surface water or groundwater interceptor that continuously flows water for a period greater than two months in any one year, but not continuously for that year.

"Invert": the lowest portion of the internal cross-section of a pipe or fitting.

"Limiting Layer": a layer that impedes the movement of water, air, or the growth of plant roots. For example: hardpan, claypan, fragipan, bedrock, and expansive clay soil.

"Monitoring Well": any artificial excavation by any method for the purpose of monitoring fluctuations in ground water levels, quality of underground water, or the concentration of contaminants in underground water.

"Mottles": spots or blotches of different soil color or shades of soil color interspersed with the dominant color.

"Mound System": an above-ground or at-grade system that consists of a pressure distribution network that evenly distributes sewage effluent to a "mounded" bed of filter material over sand media.

"Non-Expansive Clay": clay soil that does not demonstrate expansion when wetted. Properties of plasticity, cohesion, shrinkage, and swelling are negligible.

"Occupant": any person living or sleeping in a dwelling.

"Owner": any person who alone, or jointly, or severally with others:

- Has legal title to any single lot, dwelling, dwelling unit, or commercial facility;
- Has care, charge, or control of any real property as agent, executor, executrix, administrator, administratrix, trustee or guardian of the estate of the holder of legal title, or as the owner's authorized representative.

"Owner's Authorized Representative": a person authorized in writing by an owner of or holder of an easement sufficient to authorize the work on the land on which the system is to be installed, to represent the owner's or easement holder's interests, (e.g., consultant, contractor, real estate agent, etc.)

"Parent Rock": the type of geologic material the soil has developed in. In soil descriptions parent rock is noted as volcanic, granitic, metasedimentary, alluvium, or other.

"Percolation Test": a measurement of the ability of soil to absorb liquid.

"Perennial Stream": a natural stream where water is present nine (9) months or more of the year, including all NID and other public water conveyances.

"Permit": the written document issued and signed by the Division, which authorizes the permittee to construct a system or any part thereof.

"Person": any individual (owner or authorized representative), corporation, association, firm, organization, partnership, or company.

"Pit Privy": a structure for collection of human waste without the aid of water. It consists of a shelter built above an excavated pit into which human waste falls. The pit privy has no direct water connection.

"Portable Toilet Shelter": any easily moved structure built to house a toilet facility.

"Pressure Distribution Lateral": piping and fittings in pressure distribution systems which distribute septic tank or other treatment unit effluent to filter material through small diameter orifices.

"Pressure Distribution Manifold": piping and fittings in a pressure distribution system which supply effluent from pressure transport piping to pressure distribution laterals.

"Pressure Distribution System": any system designed to uniformly distribute septic tank or other treatment unit effluent under pressure in an absorption facility or other treatment/disposal unit.

"Pressure Transport Piping": piping which conveys septic tank or other treatment unit effluent to a pressure distribution manifold by use of a pump.

"Prior Approval": a written approval for on-site sewage disposal, for a specific lot, issued prior to the effective date of this Manual.

"Projected Daily Sewage Flow": the quantity of sewage predicted to be generated on a daily basis for a building or structure.

"Public Health Hazard": a condition created by a discharge of biological, chemical, physical, and/or radiological agents which are likely to cause human illness, disorders or disability.

"Public Sewer System": any sewer system constructed, installed, maintained, operated and/or owned by or for a municipality or taxing district established for sewage disposal purposes.

"Protected Waters": lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, marshes, inlets, canals, and all other bodies of surface or underground waters, natural or artificial, public or private, which are within the jurisdiction of County of Placer.

"Redoxymorphic Features": features formed by the processes of reduction, translocation, and oxidation of Fe and Mn oxides in seasonally saturated soils. Redoxymorphic features are described in soil horizons by various types of redox concentrations, redox depletions, and reduced matrices.

"Repair" (AKA System Repair): installation, replacement and or connection of the portion(s) of a system necessary to eliminate a public health hazard or pollution of public waters created by a failing system.

"Replacement Area" (AKA Repair Area): an area that is one hundred (100) percent in size of the area approved for the initial sewage system disposal field, and in a separate location.

"Sand": a soil particle between 0.05 mm and 2.0 mm in equivalent diameter. See "Soil Texture".

"Sand Filter System": a system combining a septic tank or other treatment unit, dosing system with effluent pump(s) and controls, piping and fittings, sand filter and absorption facility.

"Scum": a mass of sewage solids floating on the surface of sewage.

"Seasonal Dwelling": a dwelling that is not used as a full time residence, e.g., a vacation home.

"Septic Tank": a watertight receptacle which receives sewage from a building or structure, is designed to separate solids from liquids, retains and digests organic matter and discharges the resulting effluent to a second treatment unit or to a soil absorption facility.

"Septic Tank Effluent": partially treated sewage which is discharged from a septic tank.

"Sewage": blackwater, graywater, and/or any liquid contaminated with materials thereof.

"Silt": a soil particle between 0.05 and 0.002 mm in equivalent diameter. See "Soil Texture".

"Single Family Dwelling": a dwelling designed for and occupied exclusively by, one family.

"Site"(AKA Building Site): an area of a lot or parcel designated for a specific purpose including an approved area for sewage disposal, building, etc.

"Slope": the rise or fall in feet per one hundred (100) feet of horizontal distance. Slope is expressed as a percent of grade. For example: a land surface at a 45 degree angle has a slope of 100%.

"Soil": the unconsolidated mineral or organic matter on the surface of the earth that has been subjected to and influenced by genetic and environmental factors of: parent material, climate, macro- and micro-organisms, and topography, all acting over a period of time and producing a product--soil--that differs from the material from which it is derived in many physical, chemical, biological, and morphological properties and characteristics.

"Soil Color": color of moist soil in terms of hue, value, and chroma–for example, 10YR 3/2–using a Munsell Soil Color Chart (Kollmorgen Instruments Corporation, 1990).

"Soil Consistence": the attributes of soil material as expressed in its degree of cohesion and adhesion or in its resistance to deformation or rupture. Terms used for describing consistence are: *wet soil* - nonsticky, slightly sticky, sticky, and very sticky; *plasticity* - nonplastic, slightly plastic, plastic, and very plastic; *moist soil* - loose, very friable, friable, firm, very firm, and extreme-

ly firm; *dry soil* - loose, soft, slightly hard, hard, very hard, and extremely hard; *cementation* - weakly cemented, strongly cemented, and indurated.

"Soil Description": a notation of soil properties observed at a soil test pit including slope, parent rock type, rock fracturing, effective soil depth, and depth to groundwater, if observed; and, for each horizon observed, a notation of depth, texture, rock fragment content, color, redoxymorphic features, structure, pores, clay films, consistence, plasticity, stickiness, roots, horizon boundary, and moisture content.

"Soil Horizon": a layer of soil that is distinguishable from adjacent layers by characteristic physical properties such as structure, color, or texture, or by chemical composition, including content of organic matter or degree of acidity or alkalinity.

"Soil Horizon Boundary": the topography and distinctness of the change between two soil horizons. In soil descriptions, the soil horizon boundary is noted as smooth, wavy, irregular, or broken. Distinctness of the change between horizons is noted as abrupt, clear, gradual, or diffuse.

"Soil Moisture": the moisture content of the soil at the time the soil description was made. Described as dry, damp, moist, saturated, or seepage.

"Soil Plasticity": see "Soil Consistence".

"Soil Pores": generally tubular voids in the soil material formed by roots, animals, and other agents. In soil descriptions pores are noted as few, common, or many in quantity, and as fine, medium, or coarse in size.

"Soil Rock Fragment": rock or mineral particles in the soil greater than 2.0 mm in diameter. Includes gravel, cobbles, and stones. In soil descriptions noted as percent by volume.

"Soil Roots": the abundance and size of roots in a soil horizon. In soil descriptions abundance is noted as none, few, common, or many. Where present, root size is noted as very fine, fine, medium, or coarse.

"Soil Separate": the groups of mineral particles separated on the basis of a range in size. The principal separates are sand, silt, and clay.

"Soil Stickiness": see "Soil Consistence".

"Soil Structure": the combination or aggregation of primary soil particles into aggregates or clusters (peds), which are separated from adjoining peds by surfaces of weakness. Soil structure is classified on the basis of size, shape, and distinctness into classes, types, and grades.

"Soil Test Pit": an excavation of sufficient size and depth to allow thorough examination of the soil to evaluate its suitability for sewage disposal.

"Soil Texture": the relative proportions of soil separates in a soil as described by the twelve (12) classes of soil texture. The major textural classifications are defined as follows:

- Clay: Soil material that contains 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
- Clay loam: Soil material that contains 27 to 40 percent clay and 20 to 45 percent sand.
- Loam: Soil material that contains 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand.
- Loamy sand: Soil material that contains at the upper limit 85 to 90 percent sand, and the percentage of silt plus 1.5 times the percentage of clay is not less than 15; at the lower

limit it contains not less than 70 to 85 percent sand, and the percentage of silt plus twice the percentage of clay does not exceed 30.

- Sand: Soil material that contains 85 percent or more of sand; percentage of silt, plus 1.5 times the percentage of clay shall not exceed 15.
- Sandy clay: Soil material that contains 35 percent or more clay and 45 percent or more sand.
- Sandy clay loam: Soil material that contains 20 to 35 percent clay, less than 28 percent silt, and 45 percent or more sand.
- Sandy loam: Soil material that contains either 20 percent clay or less, and the percentage of silt plus twice the percentage of clay exceeds 30, and 52 percent or more sand; or, less than 7 percent clay, less than 50 percent silt and between 43 and 52 percent sand.
- Silt: Soil material that contains 80 percent or more silt and less than 12 percent clay.
- Silt loam: Soil material that contains either at least 50 percent silt and 12 to 27 percent clay; or, 50 to 80 percent silt and less than 12 percent clay.
- Silty clay: Soil material that contains 40 percent or more clay and 40 percent or more silt.
- Silty clay loam: Soil material that contains 27 to 40 percent clay and less than 20 percent sand.

"Soil With Rapid Permeability": soil with:

- percolation rates less than six (6) minutes per inch, or
- soil texture classes of sand or loamy sand, or
- soils containing more than 50% rock fragments greater than 2 mm in diameter, or
- soils with stones, cobbles, gravel, and rock fragments with too little soil material to fill interstices larger than one (1) mm in diameter.

"System": a sewage disposal facility, including replacement area, designed for the collection, treatment and disposal of sewage, or sewage storage only, on a site.

"Standard System": an on-site sewage disposal system consisting of a septic tank, distribution unit and gravity-flow disposal field constructed using a minimum of six (6) inches of filter material below the distribution pipe, and maintaining not less than four (4) feet of effective soil depth below the bottom of the trench.

"Toilet Facility": A fixture housed within a toilet room, bathroom or shelter for the purpose of receiving blackwater.

"Unstable Landforms": areas that show evidence of down-slope mass movement such as landslides, earthflows, debris flows, or rockfalls. Unstable landforms may have hummocky relief and undrained depressions, and may show evidence of instability such as cracks, escarpments, landslide scars, tilted telephone poles and fence posts, or bent tree trunks.

"Vault Privy": a structure for collection of human waste without the aid of water. It consists of a shelter built above a vault in the ground into which human waste falls. The vault privy has no direct water connection.

"Vertical Drain": an artificial drain upslope from a disposal field to intercept and divert groundwater from the absorption facility by penetrating a limiting layer and draining into underlying permeable soils.

"Vertical Separation": the vertical distance between the disposal trench bottom and a limiting layer, fractured bedrock, or groundwater.

"Water Table": that level of groundwater where the hydraulic pressure is zero.

## Chapter 38. Fees

The Placer County Department of Health and Human Services, Environmental Health Division, may charge and collect fees for permits and services performed. Fees are set by Resolution of the Board of Supervisors. Refer to County Code § 2.116.100.